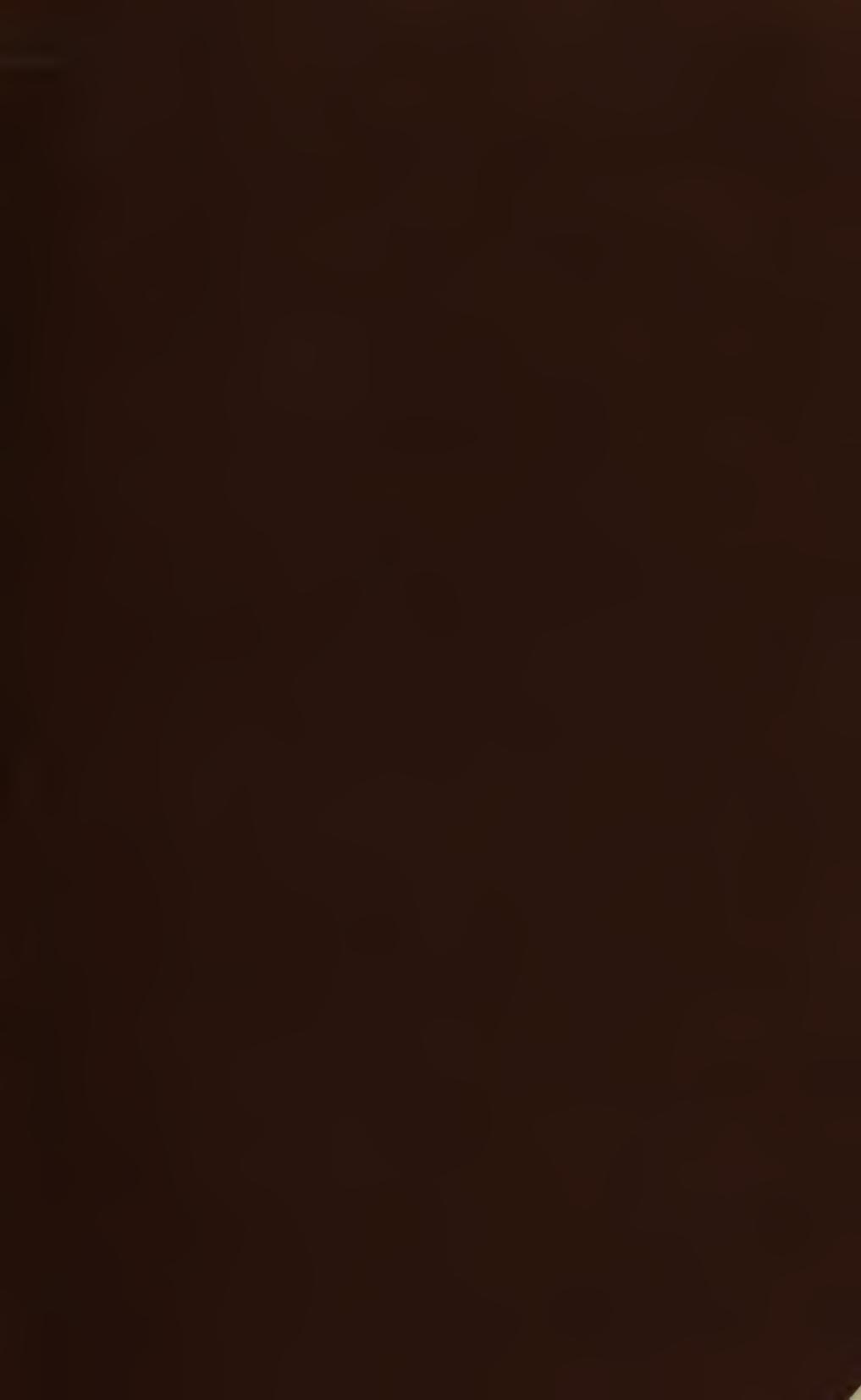


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THE

HUMAN HAIR,

AND THE

CUTANEOUS DISEASES WHICH AFFECT IT:

TOGETHER WITH ESSAYS ON

ACNE, SYCOSIS, AND CHLOASMA.

BY

✓
B. C. PERRY,
DERMATOLOGIST.

SECOND EDITION.

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P R E F A C E.

THAT the human hair is an object of general and very proper interest and solicitude, I regard as but a reasonable assumption. A dissertation, therefore, embracing every element of this important theme, is a work which cannot be looked on with indifference: especially if it has had no predecessor, and offers to substitute what is new, definite, authoritative, and invaluable, for that which is essentially vague and vicious.

But though the undertaking be justified, the necessity remains of showing that it has been properly carried out. To meet the expectations of the public, the treatise should be the production of a practical dermatologist, familiar not only with the study of cutaneous disease, but with its careful and methodical treatment; should evince a knowledge of the integuments, of the structure and mode of growth of the hair, and of the influence, on both the hair and its supporting surface, of every topical application and every condition of the system; and, considering that the tastes of the unprofessional as well as of the professional reader must be consulted, it were not amiss to include such historical and scientific details as are of an interesting nature, and even to strengthen the cautions employed in reference to the myriad nostrums so generally and freely used for the hair, with an exposition of their real nature.

All this, and much more, in the way of an *ideal*, has been constantly before me in the preparation of the present work. Though it would not become me to declare that ideal attained, I may at least endeavor to indicate the scope of my labors. In the first place, then, I present, as the fruits of considerable research and labor, a deal of literary matter, either interesting or amusing, connected with the

subject in hand. I then carefully describe the integuments of the body, and the structure and mode of growth of the hair, and devote a considerable space to the question of the chemical composition of the hair, and the causes of its several colors and shades; also to grayness, and loss of hair, and their philosophy. Next, I descant on the numerous injurious practices by which the hair of so many sufferers, or is finally destroyed, and give every necessary direction for its maintenance in its original health and strength. Also, I describe minutely the various disorders which afflict the scalp, giving the reader and student the choice between the best modern treatment by the faculty and that which I have myself successfully employed; and I endeavor to simplify both the theory and the treatment of these affections. Thinking the diseases and discolorations incident to the *face* not without interest in this connection, I have included chapters referring particularly to them, and do not fancy that the space they occupy will be regretted. Lastly, I give a vast number of formulæ for cosmetics in actual use, with appropriate cautions and comments. I have wrought out every part carefully, using plain language, and, when obliged to employ an unusual term, taking the pains to explain its meaning. Clearness and method will, I think, be observed in every department, and on every page.

I hope to be pardoned a few words of comment on several features of the work that seem to need extenuation or explanation. As regards the illustrations of disease of the scalp, all who are familiar with the aspects of cutaneous disorders—so constantly changing, and so difficult to delineate at any stage—will readily bear me out in the course I have chosen. To do real justice to this department of my treatise, I should have been compelled to issue a second volume, filled with large and costly engravings—making the work by many times more expensive to the public than it now is. Those who have inspected the *Atlas of tinted engravings* that accompanies Dr. Neligan's work on cutaneous diseases, or the larger and more elaborate illustrations, of a kindred character, issued by Alibert, Rayer, Cazenave, Erasmus Wilson, and others—some of whose huge and ponderous works can only be procured at an expense of several hundred dollars,—will perceive the absurdity of an attempt, on my

part, to rival those elaborate efforts. I have merely endeavored to give the commonest aspect of several of the more frequent disorders which are described in the letter-press; depending mainly, for conveying just ideas of the several cutaneous affections, on careful and minute *descriptions*. In this course I am not without distinguished precedent. Thus, Mr. Plumbe, in the prefacc to the fourth edition of his excellent work on cutaneous diseases, alludes to a conviction of this nature, expressed in a former edition; observing that he is "confirmed in that opinion by the results of experience."

Regarding the work just mentioned as the most original and interesting of modern dermatological lucubrations (though my acquaintance with those of Wilson and Neligan is not less intimate), I have endeavored, in various parts of this treatise, to render Mr. Plumbe a degree of justice; more particularly since I have found his views, in many respects, to correspond essentially with those which my investigations and reflections have forced upon me. His sentiments, in relation to the proper foundation of a rational *classification* of cutaneous diseases, have particularly commended themselves to my respect.

The various derogatory comments which I have felt constrained to make, in reference to the elaborate nosological distinctions to which so large a space is commonly devoted in dermatological works, will, I think, be found to contain their own justification, at least with the rational and unprejudiced mind. They are essentially strengthened (on page 213) by a passage from the work of Dr. Neligan, who (himself a strict nosologist) therein unintentionally weakens his own position. Efforts to simplify a very complicated science must certainly be appreciated, at least by the student,—to whom, therefore, the chapter entitled "Eczema" is especially commended.

In respect to the character of the remedies which I employ in my own practice, and recommend herein, I deem it unnecessary to say more than that they are comparatively simple, prompt, and effectual. They are therefore superior (though mainly vegetable) to the mineral remedies which have been in so general use for the cure of cutaneous disorders. The treatment of these affections—more particularly those occurring to parts covered with hair—is confessedly slow and unsat-

isfactory by the regular methods. If a new system prove itself more effectual than the old; it seems to me just to regard that effectiveness as its adequate vindication.

It is proper to add, in connection with the above, that the prescriptions I give from my own practice must not be understood (except in the more trifling instances) as comprising my complete system of treatment. Of course, no physician, at least, need be reminded that, as these eruptions assume many phases, so it frequently becomes necessary to adapt the remedy to the change which may therein be indicated. But, assuming that the disorder to be treated is not of long standing, and presents no unusual features, the remedies I prescribe will be found amply sufficient for its control.

In conclusion, I desire to acknowledge my indebtedness to the works of Carpenter (the physiologist) and Erasmus Wilson, for the illustrations to the anatomical portions of my work, and for the *libretti* attached to them ; also, to the very meritorious book of "Portraits," by Mr. Walter Cooper Dendy, for the models, or at least the general ideas, of my larger plates. Doing justice to all, I ask only justice for myself.

NEW YORK, July, 1865.

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CHAPTER I.

THE HAIR AS AN ORNAMENT.—ANCIENT CUSTOMS.

“It is difficult,” says Dunglison, “to assign a plausible use for the hair.” He considers even the hair of the head rather a doubtful piece of propriety, from a utilitarian point of view; but as for that which appears on the chin and upper lip of the male sex, and also on various other parts of the human body, he declares that “it fairly sets our ingenuity at defiance. In this respect,” he continues, “the hair is not unique. Many physiologists regard certain parts which exist in one animal apparently without function, but which answer useful purposes in another, to be *vestiges*, indicating the harmony that reigns through nature’s works.” While admitting that the “generally useless nipple and mamma of one sex might be looked upon in this light,” he protests that the hair of the human body, since it exists for the greater part in mere tufts, “cannot in any way be assimilated to the hairy coating that envelops the bodies of animals, and is, in them, manifestly intended as a protection against cold.”

I confess that to me these sentiments have rather a drivelling sound,—all the more from remembering the vast attainments, the genius, and the exalted position of their author. Who, after witnessing the solicitude of some bald elderly gentleman for the protection of his poll from the air, can have refrained from wishing that the denuded and tender surface were thickly clad with the protecting locks of youth? How much that ancient

person could say, were he so inclined, about the “uses of the hair!” And, as for the beard, we all know its use in protecting the throat from bronchial disorders. The moustache, too, and the hairs within the nostrils, we are assured, prevent a deal of dust from getting into the lungs, while the authority of the learned Andrew Jackson Davis may be cited to prove that the former tends to strengthen and preserve the eyesight,—there being (on the same authority) a *quasi* correspondence between the nerves of the two regions, and that removing the hairs of the upper lip leaves a considerable surface more exposed to elementary action than was contemplated in the scheme of nature. Besides, seriously, it would seem as though Dr. Dunglison, in the highest sense a philosopher, should be ready to admit that as every thing in nature bears reference to man, and is subordinate to his mind and soul, every thing is useful which ministers to his sense of beauty, or tends even in the slightest degree to illustrate man’s character to his fellow-men.

But, however men of science may choose to differ respecting the pertinence of the hair as an integral part of the human system, it must be admitted that mankind at large are of one mind in relation to its convenience, and its value as a concomitant of personal beauty. There are, indeed, some barbarians, like the Chinese, who unintermittently remove large tracts of it from their heads, fancying that the practice contributes essentially to the perfection of beauty; but the cultivated taste of civilized nations cannot sympathize with this heathenish notion. Among the latter, the hair is universally prized and cherished, and its loss is never felt without concern, even though the deprivation be but a partial one.

When we consider how conspicuous an object the hair of the head is,—connected with the noblest part of man, and always visible to a greater or less extent,—

and reflect on the infinite variety of aspects it may be made to assume, we cannot wonder that its arrangement should always have monopolized a large portion of the time employed with the toilet. Fashion has displayed her wildest freaks in this direetion; and her many-hued fancy has in no other particuler afforded so marvellous a variety of changes, as in the modes she has at various periods prescribed for the arrangement and decoration of the hair. Pictures of various costumes once in vogue have frequently excited the laughter of their descendants; but nothing could well surpass, in ludieronsness of effect, some of the aneient styles of head-dress, wherein the natural position of the hair was reversed and earieatured with all the sueeess attending the earnest efforts of the most perverse ingenuity, guided by a taste abominably and ineredibly bad.

So early as the time of Moses, the Jews had innumerable rules for dressing and wearing the hair: rules whieh they observed with religions exaetness. It has been thought that the most of them were devised by Moses, in order to still further distinguish his people from their neighbors, and eonserve the national pride. Down almost if not quite to the present day, it has remained a law with the Jews, that the women should eoneal their hair from sight after marriage. The Hebrew women were proud of their long tresses, which they adorned elaborately with gems and preeious metals. Isaiah declared that to punish the pride and wantonness of the women (whieh characteristics seem to have been pretty plainly manifested by the sex of his time), the Lord would "smite with a seab the crown of the head of the daughters of Zion;" and he also announced, that "instead of well set hair, there should be *baldness* among them." a calamity so very dreadful that we can well believe the mere mention of it must have been attended with a salutary effect. The long-haired Absalom, if not a

dandy, must have been a very fantastic person, to say the least; for, had long hair been a fashion with the men of his day, there would, perhaps, have been no particular mention of his extraordinary locks, which were long enough to give him considerable trouble in the end, and doubtless occasioned a diminution of the regret which his close-cropped acquaintance might otherwise have felt at his untimely fate. Those who are inclined to doubt the literal truth of the scriptural statement to the effect that the strength of Sampson lay in his hair, may at least see some significance in his story; for a continuance in his former virtuous way of life would undoubtedly have preserved his natural strength and health, and a continuance of his bodily vigor would, perhaps, have still found expression in the abundance and strength of his hair,—the condition of which may be no mean index of the general state of the system. That all the vanity of the men of Judah was not confined to Absalom, even in relation to the hair, we may gather from a statement of Josephus, whose veracity, by the way, has lately been established, by discoveries in Egypt, in many points where it had formerly been the custom to discredit or at least question him. In the *Antiquities* (viii. 7), he says that Solomon's horse-guards "daily strewed their heads with gold-dust, which glittered in the sun." Paul thought it necessary to reprove men who were inclined to let their hair grow long, and assigned to women the exclusive privilege of doing so. From various sources we learn that the fathers of the early Church found frequent occasion of reproving the vanity and extravagance of the people, as displayed in their modes of dressing the hair; and even went so far, at times, as to threaten severe penalties in case they should persist. Our wonder at this will abate when we come to consider the fashions of that period. All the resources of ingenuity and art, we are

told, were exhausted—and doubtless a number of small fortunes also—in the endeavor to display the hair to the utmost advantage. Thus, it was loaded with the most dazzling finery; “the mimic skill of the *Friseur* was frequently called into requisition to represent fanciful devices, such as harps, diadems, wreaths, emblems of public temples and conquered cities, or to plait it into an incredible number of tresses, which were often lengthened by ribands so as to reach to the feet, and loaded with pearls and clasps of gold.”*

The Greeks delighted in long hair; the early Egyptians, on the other hand, seem to have abominated it. All classes, among the latter, were required, for the sake of cleanliness, to keep the head closely shaved, and for its protection from the rays of the sun, were permitted the use of ventilated wigs.† This privilege was doubtless inestimable to those who could afford it; to the rest of the population—no doubt a pretty large proportion—the indulgence must have seemed like “adding insult to injury.”

We find that artificial hair—under which category the above-mentioned wigs were doubtless included—was used as well by the Greeks, the Carthaginians, and more generally by the Romans, who bought large quantities of human hair, favoring particularly the blonde hair of Germany; and were thus able, by a sacrifice of no inconsiderable portion of their gold, to increase to an alarming extent their apparent wealth of golden locks. They possessed the art of dyeing hair, and practised it assiduously. In fact, it would seem as though the principal fashionable vagary of that period was how to increase the number of effects produceable with or upon the hair,—the more unnatural and absurdly elaborate the better. I am not positive whether they found a

**Encyclopædia Britanica.*

† Wilkinson's *Anc. Egyptians*, iii. 354.

way of dyeing the hair yellow, when nature had not favored them with that color; but certainly yellow or golden hair was very fashionable at that time, and those who wore their own hair alone, were accustomed to sprinkle it with a kind of golden dust; and it is said that many were in the habit of standing in the sun, bare-headed, for long periods together, under the impression, I presume, that a golden sun must eventually give them golden hair. It would be pretty certain to give them a headache, at least. This unpleasant means of instituting a conformity with the prevailing fashion must have been adopted mainly by those who could not afford sufficient gold-dust to produce the desired effect. There are indiscreet ladies at the present day, who would make quite as fearful sacrifices of this sort for the sake of appearing in the fashion, should yellow hair again become the only "gentle" kind. For their sakes, and for the credit of an age of common sense, I hope the various colors of the hair now in vogue will continue to be tolerated; or, at least, that when the fashionable decree shall go forth, that but one color will satisfy the demands of the capricious goddess, the color may be *black* instead of yellow, since then the poorest can buy a bottle of "hair-dye," and run no great risk of addling her valuable brains,—which would be in considerable danger were she to try the effect of a July sun at noon-day, with the same end in view that was entertained by the impecunious ladies of ancient Rome.

One of the myriad conceits, relating to the hair, that delighted the fancy of these classic beauties, was to construct with it a sort of tower, rising up grandly from the crown of the head till it reached a fabulous altitude, and to ornament the sides of this ridiculous structure with formal rows of curls, ranged around with mathematical precision, and not unfrequently to superadd a number of pendent curls dangling from various parts.

The Greek ladies, who possessed more sense and taste than the Roman, refrained from these ridiculous extremes, and commonly arranged their hair (as may be learned from the ancient sculptures, etc.) with dignified simplicity.

The men of Rome acknowledged the force of arbitrary restriction in relation to the hair, and also had several superstitions, with which a certain prescribed treatment of the hair was intimately connected. Thus, a boy's hair was cut for the first time at the age of seven, and at the next septennial. The Greeks, greatly superstitious like the Romans, observed many customs of this sort. Parents dedicated the hair of their infants to the gods; young women at their marriage dedicated their hair in the same way; also, warriors, after a successful campaign; and sailors, in commemoration of their deliverance from extraordinary perils, as by storm. It was hung on consecrated trees, deposited in temples, or buried in the tombs of friends, in the manner of Achilles at the funeral of Patroclus. They would also, as a token of affection or reminder of calamity, shave or cut it off, or pluck it out, or, on the other hand, neglect it altogether.*

The ancient Gauls were proud of their long hair, and deemed that it conferred a peculiar honor on the wearer. Julius Cæsar, their conqueror, could have inflicted no deeper humiliation on them than compelling them, as a token of submission, to cut off their hair; so that cropped hair became a badge of servitude, or at least, a token of inferiority, and thus remained for a long period. The Danes and Anglo-Saxons, and most other northern nations, likewise valued long and flowing hair, and made the cutting it off a punishment for various

* *Encyc. Brit.*

offences.* Gregory of Tours observes, that "among the Frankish kings it has been long said that it was the peculiar privilege of the blood-royal to have flowing locks; while for all other persons there were gradations in the length and peculiar cut of the hair, according to rank,—from the noble down to the close-cropped slave. When a prince was excluded from the right of succession to the crown, his long locks were shorn, to denote that he was reduced to the condition of a subject." Clovis was a martial king, and a man of ideas. It is, therefore, not surprising to find the French nobility of his time wearing their hair short. But longer hair and greater effeminacy began to appear together, as of old, not long after his death, and continued to prevail down to a period in the reign of Francis I., when the king, having received a wound on his head, under circumstances which reflected credit on his pretensions as a warrior, began to crop his hair close, that all might see his honorable scars, and of course short hair became at once a popular fashion. Louis XIII. once more turned the tide in favor of long hair, which Fashion now demanded of such excessive length, and presently of such excessive curliness, that the use of *wigs* was resorted to, both to increase the apparent volume of the hair and to save the trouble of curling it so often. Hair-powders, periwigs, and enormous bands followed close upon the introduction of wigs, and various other outlandish fripperies accompanied them; but the great French Revolution was as severe upon the fashions as upon the inventors and perpetrators of them, and may be said to have put a sudden period, for the time, to the progress of invention in that direction.

We are told that, in the eighth century, it was the

* The hair of convicts, etc., is at the present day cropped close, as a badge of their condition.

“custom of people of quality to have their children’s hair cut, the first time, by persons they had a particular honor and esteem for; who, in virtue of this ceremony, were respected as a sort of spiritual parents, or godfathers to them.” This practice is thought by some to have been known much earlier than the eighth century; for we learn that Constantine “sent the pope the hair of his son Heraclius as a token that he desired him to be his adopted father.”*

CHAPTER II.

THE CHURCH AND LONG HAIR.—THE BEARD.

LONG hair, in ancient times, was extremely obnoxious to the dignitaries of the Church, many of whom took active measures to make their views prevail, employing persuasions, threats, and as a last resort against the more refractory, even actual excommunication. Pope Anicetus (A. D. 155) peremptorily forbade the clergy to wear long hair,—“an injunction,” says our authority, “obeyed not without much reluctance on the part of many.” Though this pope is commonly thought to have been the first to have moved officially in this matter, it is equally true that in the churches of the East the prohibition is of far earlier standing, as a letter containing a copy of a decree to the same effect is of much older date. Isadore Hispalensis declares the clerical tonsure to be of Apostolic institution. A canon of the year 1096 is still extant, decreeing that such as wore long hair should be denied the privilege of enter-

* *Plocacosmos.*

ing church, and (what was much more to the point) of being prayed for when dead. There still exists an amusingly furious diatribe of Luit Prand against the Emperor Phocyas, who incurred it by following the custom of the other Eastern emperors, in respect to wearing long hair,—the only current exception, it seems, having been Theophilus, who, being unfortunately bald, was forced to make a virtue of his necessity, and constrained his subjects to follow his example. The clergy must have been very well content with Charlemagne, who, the very exact French historians and antiquarians inform us, wore his hair very short, and of course was followed to the letter by his subjects; and perhaps little Pepin was still more in their favor, for his hair was shorter still. There could scarcely have been much fault found in Charles the Bald, on the principle that the amount of moral turpitude was proportioned to the amount of hair; for he was as badly off, in respect of capillary substance, as the venerable and exemplary colored gentleman of the song. But it is plain that the sensitive feelings of the clergy had not been lulled into lasting slumber by this long intermission of the hirsute heresy; for the moment Hugh Capet began to encourage the tastes of hair-fanciers, we find the ecclesiastics once more up in arms, excommunicating offenders without mercy. Charles the Young received so eloquent an expostulatory lecture from Peter Lombard—having previously displayed an heretical leaning, natural in one so youthful—that he cut off his hair forthwith, and by his future exemplary conduct saved the ascetic Peter a world of anxiety. We are told that for several generations his successors kept their hair within the standard length, and thus, doubtless, greatly ameliorated the future pangs of purgatory. “A professor of Utrecht,” says an antiquarian writer on this subject, “in 1650 wrote expressly on the question, whether it be lawful

for man to wear long hair, and concluded for the negative. Another divine, named Reeves, who had wrote for the affirmative, replied to him."

Anselm, Archbishop of Canterbury, seems to have been the first of the Anglican bishops who distinguished themselves by official action in favor of short hair. He pronounced sentence of excommunication against all who should persist in wearing it long. He has, however, acquired less renown in this line than Sesto, a Norman bishop, who, in A. D., 1104, preached so eloquently and affectingly on the subject, before Henry I. and his courtiers, that they gave in on the spot; whereat the wise and thoughtful prelate, willing to take time and his fellow-men promptly by the forelock, whipped out from his sleeve a pair of shears, and had soon removed the curls of the whole court. It is fair to presume that Sesto knew his own power intimately, or he would hardly have thought it probable he would prevail so finally, at one effort, that all which would be necessary to complete his triumph would be the "abhorred shears." It may be a question, however, whether the ingenious and wily bishop materially strengthened his spiritual hold upon his people, and by such an exhibition of worldly cunning, and by a triumph whose sting must have been felt with all its original poignancy whenever they surveyed the tract thus ruthlessly laid bare, and called to mind its former glories.

In "*Plocacosmos, or the Whole Art of Hair-dressing,*" etc.,* a work published in London in 1782, there occurs

* "*Plocacosmos, or the Whole Art of Hair-dressing;* wherein is contained Ample Rules for the Young Artisan, more particularly for Ladies' Women, Valets, &c., &c." The foregoing is only about one-third of the title-page of this singular issue—which, besides being a complete manual of hair-dressing, etc., is also a compendium of morals, the training of youth, the history of the hair, and, in fact, is "a Guide through the Seven Ages of Man; the whole interspersed with Moral Thoughts, being necessary for all Families." The author is James Stewart. It is now very rare.

a whimsical complaint of the artists of that period, who must have been possessed of a very imperfect comprehension of the nature of the hair, if they merited his reproof. "It must not be forgot to remark," he says, "that our designers of prints run into a strange error in expressing the hair. Thus, the only characteristic they can give us of a savage is to portray the wildness of his hair, as if on end. I cannot imagine," he continues, "that nature does not perform her operations as complete in the wildest of the human species as in the most cultivated European; or that a profound knowledge of the arts and sciences, with every other adorning perfection, will have the power of forming the hair into graceful ringlets on the shoulders, or to bend in waves round the temples. Yet such is their plan; for proof, see all their new publications, from each new discovery, in which we are favored with a view of characters." I should say that the hair standing upon end would be more proper to some representation of fright than of barbaric resolution or indifference, and must therefore cordially agree with my critical friend. "Galgaeus and other British prinees," he adds, "were carried to Rome as prisoners, and while there, delivered orations worthy a modern British senator; yet they are represented as naked, their features savage, and their hair like quills of the porcupine; while at the same time the youths, led captives in their train, are remarked, by the Roman ladies, for comely persons and blooming countenances." While this extract still further exposes the ignorance of the small artists of the last century, whose business it was to convey accurate notions of their ancestors to the British publick, it likewise acquaints us with some interesting facts; and I may say, in justice to the author of *Plocacosmos*, that though the idea of including a whole code of morality, and many other kindred features, in a work upon hair-dressing, is sufficiently whimsical and

inartistic, it would be doubtful if a reader of average intelligence could go through it and not meet much that was both new and interesting, on a variety of topics. I have found more matter pertinent to the subject of this and the preceding chapter in *Plocacosmos* than in all the other works I have consulted, and these have been by no means few.

Before commenting on the further mutations of fashion in respect to the hair, it will become me to say something of the fortunes of the *beard* during the period which I have been treating. It would seem that the beard received as much consideration from the ancients as the hair. In many instances, if we may believe the accounts with which we are favored, no inconsiderable portion of the consequence attaching to the personality of a man was thought to proceed from his beard—which in some instances conferred beauty, and in others dignity and majesty; while doubtless there were not wanting those who considered their beards a sort of synonym of every thing that in those days was deemed admirable and noteworthy. With the Jews the beard was sacred, and possessed an emblematic significance; it was so precious as to be carefully guarded and nourished. They anointed it with costly unguents, and never alluded to it lightly. The Turks have always held the beard in similar favor. It is said that it is more infamous, among them, to have one's beard removed than to be publicly whipped or branded. With them, the beard means as much, in reference to liberty or slavery, as the hair formerly did among the Franks. Thus, servants in the seraglio may not wear the beard; but should they obtain their liberty, they let their beards grow, that the world may see that they are slaves no longer. The Persians, likewise, make the beard to agree with personal liberty and authority. To cut off the beard of a Persian would be to

so degrade him in his own estimation, and doubtless in the minds of all who did not know his real condition, that perhaps he would prefer the severest punishment, or even death. The Arabs go to the length of making the preservation of the beard a religious duty, finding authority for the tenet in the fact that Mahomet never cut his own. The Romans anointed their beards; and it is related that when the invading barbarians came into the presence of the twelve Roman senators, they were so struck with awe, by so much majesty and gravity, that for the time they simply stood and stared; but presently, one of the bolder or less impressible, though doubtless not designing to be rude, ventured to handle admiringly the beard of the nearest senator. Perhaps had he chosen to spit in the face of the august grandee, he would have suffered a milder punishment, if any; but he knew not what he was doing when he thus violated one of the sanctities of that holy presence. The eyes of the senator flashed fire; he raised his gilded mace, and hurled the presumptuous wretch to the earth. This was the true sublimity of self-respect; for every hair of that snowy beard was himself.

“The faces of ancient Greek and Roman medals,” observes the author of *Plocacosmos*, “are generally bearded; some are denominated *pagenati*, as having long beards, *e. g.* the pantheon kings; others have only a *lanugo* about the chin, as the Seleucid family.” He informs us that “Adrian was the first Roman emperor who nourished his beard; hence all imperial medals before his time are beardless, after him bearded.” “The medals of gods,” he continues, “and heroes in vigorous youth, represent them beardless, except Jupiter, and a few others. The Romans paid their worship to a bearded Venus, *Veneri barbatae*, supposed to have been of both sexes, a statue of whom was also found in the isle of Cyprus. The reason of representing the goddess of

beauty with a beard, is variously guessed at by the learned."

The Turks have a curious ceremony, in the case of visits of formality ; it consists in sprinkling sweet-scented water on the beard of the guest, and then, while it is yet moist, strewing it with powdered aloes-wood, the odor of which, combining with that of the water, creates a very agreeable perfume. They collect with care the hairs that fall when they are combing the beard, and when the hairs have accumulated into a definite quantity, they inclose them in a paper, and bestow them finally in the spot where their buried friends repose.

The kings of Persia, says Chrysostom, wore their beard woven, and ornamented with gold thread. Some of the kings of France had a not dissimilar custom, which consisted of knotting the beard and "buttoning" it with gold. According to Le Compte, the Chinese make the most of the small beards furnished them by nature, and hugely envy those Europeans who have been in that respect more bounteously endowed. We are told by Kingson that no small share of the religion of the Tartars relates to the management of their beards ; he also assures us that they engaged in a conflict with the Persians, that proved long and bloody, because the Persians refused to form their whiskers upon the Tartarie model. It shocked and angered the exemplary Tartars that a people like the Persians, so correct in every thing else (for in most respects a Tartar and a Persian were as nearly alike as two peas), should be so obstinately heretical on this one point.

So, too, disputes latterly arose from time to time between the Greek and Roman churches, on the same subject. The Greeks were zealous in favor of long beards ; and the Romans, glad of so good a chance, ranged themselves on the other side, and went to shaving most assiduously. "They have even," says one, "made

some express constitutions *De radendis barbis.*" Their beardless images of saints quite scandalized the Greeks. The statutes of several monasteries show that the lay monks might let their beards grow, but their priests must shave; it also appears that the beards of such as were received into the monasteries were blest with impressive ceremonies.

Blessing the beard was formerly quite an elaborate solemnity; when an ecclesiastic was shaven, his beard was devoutly consecrated, and there have descended to us some of the prayers wont to be employed at such ceremonies. The young men of the better classes were shaved for the first time by some reputable friend of their parents, or some eminent personage if possible, who thus became the youth's godfather or patron. Before the period in question, it was simply requisite to touch the beard of the boy, in order to become invested with this poetic relationship. Alaric touched the beard of Clovis, and thus became his god-father; and this, it is said, was prescribed in one of the articles of the treaty between them.

The Church has not always been opposed to beard-wearing; for though it has generally objected to the beard on the score of its savoring too much of worldly pride, yet there have been periods when it has regarded the practice of shaving as too effeminate, and considered the beard more consonant with true clerical gravity than a shaven face.

The czar Peter decreed that his subjects should shave; but, as they had never done this before, he found some difficulty in enforcing his edict, and we are told that "he was obliged to keep on foot a number of officers, to cut off, by violence, the beards of such as would not otherwise part with them."*

* *Plocacosmos.*

So the Greeks, according to Allinoes, from Chrysippus, had always worn their beards, till the time of Alexander; and Plutarch says this monarch commanded the Macedonians to be shaven, that their enemies might not avail of their large beards in close conflict. “However this,” says Stewart, “we find Philip, his father, as well as Amynas and Archelaus, his predecessors, represented without beards.”

Pliny declares that shaving was not practised by the Romans till the year of Rome 454, when P. Titinius introduced some barbers from Sicily. The custom of daily shaving was begun by Scipio Africanus. We further learn that the first fourteen Roman emperors shaved, but that the emperor Adrian allowed his beard to grow, in order, as we are told by Plutarch, to hide certain scars.

“In middle-aged writers,” says Stewart, meaning doubtless writers of the middle ages, “we meet with *Aduentus Barbam*, used for stroking and combing the beard, to render it soft and flexible.”

In some countries those who mourn suffer the beard to grow, while in others shaving is deemed more consistent.

CHAPTER III.

LATER CUSTOMS.—PERUKES.—HAIR DRESSING.

FOR a long time previous to the reign of Henry the Eighth, our English ancestors would seem to have paid little attention to their hair, or to their beards; and it is probable their native wildness was very emphatically expressed in the matted and dirty shocks which covered their heads and chins. The monarch I have mentioned, however, seems to have possessed some rather radical notions on the subject; in fact, he may almost be said

to have made it a hobby. He not only had his hair “polled” very short indeed, but he directed that everybody else should do the same; he also granted a new charter to a “company” of pollers, or barbers, united them with the company of surgeons, permitted them to wear livery, and to crown all, actually “became a member of this company, at their hall in Monkwell-street.”

King James, his grand-nephew, imitated him in the matter of short hair. Charles the First, however, possessed a very different taste in that respect, and not only wore his hair long, flowing about his shoulders, but devoted much attention to his beard, which was likewise long, and cut fantastically. “As he was a patronizer of the art,” says Stewart, “under him Vandyke introduced new fashions in the hair and head-dress,—the hair, in innumerable little twisted curls, round the face, and in a multitude of cork-screw curls behind, not unlike what is worn by some at this day.” Stewart, in this connection, gives a curious bit of history. “During these troublesome times,” says he, “the queen of Charles the First, standing at the window one day, while one of the tumultuous mobs, then too common, had assembled, fixed her eye on a blooming youth, with his hair curled short round his head. She called out, there was a handsome round-head; which expression gave name, afterwards, to the whole Oliverian party, they being always called round-heads, in opposition to the cavaliers, who were the king’s loyal friends.”*

As would be natural, no change took place in the manner of wearing the hair during the Protectorship. The hair was kept short and straight, and plain like the dress, the only admissible ornament being the clerical

* Stewart also tells, in a rather whimsical and quaint manner, how it happened that the terms cavalier, or loyalist, and round-head, or republican, changed into the corresponding ones of whig and tory.

band. But with the Restoration came a corresponding revolution in dress, as well as in manners. Nothing was now too elaborate and costly. As exaggeration soon came to characterize every other idea in relation to the person, of course it followed that the hair must also exhibit features as far removed as possible from those of simple nature: hence the invention of the preposterous *peruke*, or periwig, designed to give the effect of a perfectly preternatural head of hair, in a state of perpetual full-dress. It might be described as a voluminous cataract of curls, descending from the top of the head, on all sides except the front, burying the neck, and enveloping the shoulders in a huge mass of capillary material, sufficient for a dozen heads in Cromwell's time. These periwigs were horribly expensive, costing at first about a hundred guineas,—a sum that must have staggered all but the extremely wealthy. Still, by hook or by crook, all managed eventually to get their *peruke*; and very fortunately the cost lessened in proportion to the spread of the fashion; not to the point, it would seem, however, of actual loss to the manufacturers, many of whom made considerable fortunes out of the traffic. And presently we find various styles of the periwig coming into use,—the several professions, trades, etc., each choosing a distinctive one. "Hence," says Stewart, "we hear of the clerical, the physical, and the huge tie *peruke* for the man of the law, the brigadier, or major for the army and navy, as also the tremendous fox-ear, or cluster of temple curls, with a pig-tail behind. The merchant, the man of business and of letters, were distinguished by the grave full-bottom, or more moderate tie, neatly curled; the tradesman by the snug bob, or natty scratch; the country gentleman, by the natural fly and hunting *peruke*. All conditions of men were distinguished by the cut of the wig, and none more so than the coachman, who wore his, as there does [sic]

some to this day, in imitation of the curled hair of a water-dog."

Less seems to be said concerning the head-dress of the ladies, during this period. It is but natural to suppose that at first it was as preposterous as that of the other sex, and also far more varied in respect to details. Stage-costumes referring to that period endow the ladies with altitudinous towers of lace, "or linen of some kind," says Stewart, who is by the circumstance reminded of Shakspeare's lines :

"Behold yon simpering dame, whose face
Between her forks presages snow!"

What may seem odd in this matter is, that the ladies would appear to have tired of those fashions sooner than the gentlemen ; for it is mentioned, that in *Lady Jane Gray*, one of Rowe's plays, while Lord Guilford Dudley appears attired in all the elaborate frippery of the period, high pernke and all, the heroine is not only dressed with simplicity, but appears with her natural hair, parted in the middle, quite unornamented, and hanging on her shoulders with careless grace. Thus, also, at a still later period, in the tragedy of *Cato*, Mrs. Booth and Mrs. Oldfield exhibit in their respective "make-ups" the same relative and significant difference.

Prior to the time of Garrick, the "properties" of the stage, so far as related to the hair, were few and simple. Even Quin, says Stewart, "acted almost all his young characters, as *Hamlet*, *Horatio*, *Pierre*, &c., in a full-dress suit and large peruke." But Garrick soon did away with this inartistic simplicity of means. He insisted that the dress should in all cases suit the character ; and as a consequence, there was soon as great a variety of wigs, or "natural heads of hair," as they were now called, as of costumes : comedy, tragedy, and farce, old men, young men, louts, gentlemen, etc., etc., none

were forgotten, or failed to be distinguished by an exclusive variety of hair.

During the first half of the eighteenth century, English ladies in private life wore their hair in a manner at once simple and elegant,—in some respects, if not in all, resembling the style of the present day. But about the year 1745, we find the toupee irons coming into use. The front of the hair was curled with these instruments and turned back under the cap,—which, it seems, was also a new thing. According to the industrious Stewart, this “was the first stage of wire caps, which reached about the middle of the head behind, with small wings on each side, and the hair, in a few buckles, hanging carelessly in the neck.” Then came the French curls, from Paris. “They look like eggs strung in order, on a wire, and tied round the head,” says Stewart, contemptuously. With the curls came also the French crape toupee; at the same time a mode called the English style, of straight and smooth hair, was also employed. “From a notion of cleanliness,” the English, when they at first embraced these styles, had them imitated in *false* hair; and from similar notions they objected to powder. But fashion eventually triumphed, as usual, and they accepted the genuine modes, with all their filth and discomfort. The “scallop-shell” or Italian curls made their appearance just as some were beginning to tire of the French. They are described as consisting of “curls in three rows, done back from the face in their several shapes.” Then there were the German curls, a “mixture of scallop-shell and French in the front, curled all over behind, or *tête de mouton*.” Subsequently we find long curls in favor; these were French in style, but began far higher, “with the points rising as they went back.” Also, “the toupee, with two curls done over wool.”

Between 1760 and 1770, “cushions” came into use.

The first were quite a modest affair, resembling, as we read, "an exceeding small woman's pin-cushion,"—whether the adjective refers to the woman or her pin-cushion I am not positive: probably the latter; but, once this fashion was fairly started, it remained a long time popular, and of course the cushion appeared of all practicable sizes, according with the successive freaks of taste. Stewart wrote twelve or fifteen years afterwards, and testified that the hair "has been wore higher since, wider, narrower, lower, heavier, lighter, more transparent, more craped, smoother, &c., &c. With one curl, two curls, three curls, four curls, five curls, and no curls at all, but all from the same foundation,"—meaning the cushions.

The funniest part of *Plocacosmos*—though the author himself is not aware of it—is the passage on page 243, beginning, "We now come to the main spring of this work, to wit, the Art of Hair Dressing," etc. It enjoys the pre-eminence of comicality from various circumstances. One would suppose that after spending so much time, of an agreeable character, in arriving at the main spring, it would have been quite as well to let it go altogether and consider the object of the work attained. For my own part, I care nothing for the main spring itself, but must admit that the rest of the machinery of his ingenious and learned structure has vastly entertained and instructed me. Were the seventy-two pages of main-spring expunged, those remaining would constitute one of the most diverting of books,—quite a little magazine of harmless morals and maxims, and gentle lore not uninteresting, together with a goodly proportion of *dramatic criticisms*, and historic notes relating to the stage. The contrast between this matter and that which it accompanies, is extraordinary. The latter consists of minutely elaborate directions to hairdressers, for the manipulations which

were to result in the various styles of wearing the hair then in vogue. One cannot help a feeling of admiration for the barbers and hairdressers of that period, not only because such an astonishing light was then shining among them, but because their minds were deemed, by their own associate, acute and retentive enough to master the details of a marvellously intricate science, which apparently degrades chemistry, botany, or mineralogy, to the level of mere child's-play. How well can we believe his caution "to the male or female operator," at the outset of his exposition, that "the work they are about to perform will require much more attention, and exertion of abilities, than they are aware of or imagine."—"One thing," says he, "is particularly necessary, that you should be under no embarrassment, but be possessed of a considerable share of easy, silent determination: you must imagine, to obtain this, that the person on whom you operate is a mere statue, or at best a piece of still-life. For this reason, it is plain, you must not give way to conversation, as that will draw your attention from your business, which you will find to require all and more than you are possessed of." This must have held out to the average *artiste* of the comb a dreadful prospect indeed. A first surgical operation would be as nothing to it. Possessing myself a mind of but the average strength, I confess I am so bewildered, after perusing the seventy-two pages I have mentioned, that I have not to this day been able to picture to myself the marvellous and almost supernatural structure to which they tend, nor to comprehend whether the "operator" was a day, a week, a year, or an ordinary life-time, in consummating the glorious plan in all its multitudinous details. I can but sincerely congratulate my readers, and the age, on their happy freedom from such a fearful bugaboo as this nightmare-ish system of *disarranging* the hairs of the head

as well as the nerves of their owner. We can scarcely believe that our ancestors, or at least relatives, of but a couple of generations back, could have been such egregious donkeys. Stewart's system becomes a tremendous joke, after all he has said in ridicule of preceding customs, since none is superior to his own in genuine folly and stupidity. No wonder he should have cautioned such ladies as might take it into their silly heads to dress their own hair, after the mode he illustrates, that they would "find it very troublesome and tedious, as well as exceeding tiresome for the arms, and straining for the eyes, sometimes not only making them tender but even blood-shot!" We can well believe him. "Those who are willing to surmount those difficulties," he continues, "and can spare two or three hours with patience and perseverance, may in time, by practice, make some progress and proficiency. First, the lady would do well to habit herself in easy loose attire, that her arms may not be under the least restraint, but have the full power of them, as they will want to be almost a foot above her head the whole time she is dressing." I imagine that the most of the ladies would read no further than this, but would at once conclude to practice economy in some other line, and go on hiring Professor Stewart.

The rules for dressing gentlemen's hair are very nearly as elaborate as the other set, and consist in a great deal of frizzing, curling, rubbing in of powder and pomatum, etc., etc., consuming hours upon hours for their proper carrying-out, and being as well calculated to try the patience of the saintly as any test that could be named. Suffice to say, that while the "back hair" was to be carefully manipulated and done up in a bag, and curls were to be elaborated at the "sides" with infinite delicacy, the top was required to be "feathered" all over, or "frizzed" till it should "carry with it (while you view

it from the front) the idea of your standing on the beach and viewing the sea as far as your eye will carry you, till by a gentle swell it falls, as it were, from your sight!" One would now fancy that the phrase "gentle swell" referred more appropriately to the subject operated on than to any thing else in nature.

The reader will perceive, from the following, that the delights of being a gentleman in those days, are not yet fully depicted:—"When the gentleman comes home at night, his bag being taken off, a little soft pomatum may be rubbed over the hair and curls pretty much; then with a roller for every curl, roll them close up to the head, but without using the comb, as it generally is the cause of the headache next day. The hair being rolled up, a strong net fillet, not bigger than what easily takes the hair in with it, [or] a very broad bandage, is to be put over the head with the strings; then drawn till it clings like a purse all round the head, comes twice round and ties in the neck. This is all the covering a gentleman's head should have, as well for health as the hair. Next morning the hairdresser has only to take the rollers out, and harrow, as it were, pretty strongly, the top and curls with the wide teeth of the dressing-comb, in order to stroke the dirty powder out. When untied behind, the hair must also be well combed, that all the foul powder may fall away. Then a little fresh pomatum softened in your hand, and a little powder, may be used all over; after that, slight frizzing and finishing as before; so on you may go every day, till it is to be combed out, and then you may proceed as before."

The gentlemen, like the ladies, are also discouraged from the idea of dressing their own hair. "This one disadvantage," he says, "attends all who dress their own hair, that they bear the air exactly of an old soldier, who has been obliged all his life to tie his own hair, yet

is not the less awkward and mean-looking." We can fancy how grateful this remark must have made all his fellow hairdressers.

Stewart here and there very ingeniously celebrates the virtues of certain preparations of his, such as the "Errieau Oil," the "Creseent Pomade," and the "Sospito Liquid." These classic appellations are all duly explained, and the virtues of the several concoctions elaborately illustrated. Towards the close of the work he gives a long list of articles of perfumery, etc., of his own manufacture, with the recipes, flattering himself that he shall not appear less candid because he deals in the articles. For curiosity's sake, I may copy a few of these, in the proper place.

CHAPTER IV.

CURIOS HISTORICAL FACTS RELATING TO THE HAIR.

To illustrate the singular fortunes of a word,—which may gradually in the lapse of time, become so corrupt that at length it bears little or no resemblance to its first orthography,—it may be mentioned that the term peruke, or periwig (which meant originally but a head of natural hair unusually long and carefully cultivated), is derived by the *savant* Menage from the Latin *pilus*, which means the hair. The several stages of the descent are given as follows:—*pilus*, *pelus*, *pelutus*, *pelutuus*, *pelutiac*, *perutica*, *perruca*, *perruque*. The ancient title of the false peruke it is said was *capillamentum*: though some have doubted whether the ancients really were acquainted with the peruke proper, notwithstanding the fact that they employed false hair. The structure which was in use in the time of the satirists Martial and Juvenal, and was the theme of some of their jests,

hardly deserved the title of peruke, since it was nothing better than hair painted and glued together. The emperor Comodus's peruke, as described by Lampridius, was a thing of this sort, covered with glutinous perfumed oils, to which adhered the serapings of gold with whieh the surface was afterwards powdered. The long peruke of modern times came into use about the year 1629, at Paris. Young and old, even those of the former who possessed abundant fine natural hair, at length embraced the fashion of wearing them, in spite of the imputation they incurred of having lost their hair through the action of some loathsome and disereditable disease. About the year 1660, some of the French clergy adopted the fashion; but it is said that in 1684 the cardinal Grimaldi interdicted the custom among them, except through special dispensation procured on the plea of necessity,—and in 1688 the bishop of Louvar did the same thing. M. Thiers about this period produced a treatise in which he earnestly attacked the practice of peruke-wearing among the clergy, proving it quite against the deerees and canons of councils.

The fancy was at one time common, and is entertained by many even now, that much depends on the time at which the hair is cut, considered with reference to the changes of the moon. It was thought unwise to cut the hair when the moon was waning; for then its growth would be checked: it would perhaps be withered, and totally ruined. After alluding to parallel instances testified to by botanists and gardeners, wherein the influence of the moon upon the growth of vegetation is apparently considered well settled, the philosophie Stewart delivers himself thus emphatically:—“This I can with great truth affirm, that, if the hair is cut in the moon’s wane, it will not then grow, but withers imperceptibly till cut afresh.” After reasserting and illustrating this proposition, he further observes:—“if

there wants any further proof, ask any Frenchman accustomed with the manners of the different provinces of his own country, when he will tell you, that in particular places in France the peasants study this rule almost religiously ; and it is always remarked, that the hair in those provinces is by much the best."

I am aware that it is the custom of the present day to laugh at the notions and superstitions of the past ; but, remembering the significant adage that "where there is considerable smoke there must be some fire," I do not feel warranted in pronouncing finally against this time-honored fancy. Though it must be admitted that many constitutions are endowed with sufficient vitality to withstand every sort of extraneous influence, there are some so feeble, or so sensitive and delicate without positive weakness, that should the moon possess any malign power whatever, during the latter half of its circuit, a position which is fortified by concurrent circumstances, we may suppose them to come under its influence, which, though it should affect the system generally, might exhibit itself positively only in the hair. There are few who would care to sleep where the moon could shine fully upon them ; but perhaps it is as idle to attribute to the moon's rays a power which is not proved, as to indulge the fancy under consideration. I presume the notions are equally venerable and their entertainers equally wise.

Several phenomena of extraordinary hair-growths have occurred which constitute strange exceptions to the general experience of mankind. Instances of hair attaining a marvellous length, are not infrequent ; and it is said that it is by no means uncommon among the Malays for the hair to touch the ground. But the phenomenon of a *woman with a long beard* is extremely rare. A woman is mentioned by Eusebius Nicerimbergius, who had a beard reaching below her middle.

There was also a woman at Copenhagen, alluded to by Bartholin, who by virtue of her profuse beard enjoyed the reputation of being a hermaphrodite. A bearded woman was a few years since exhibited in New York.

It has long been believed, on the authority of certain historical statements, that the hair continues to grow after death. Thus, it is said that when the sarcophagus which contained the head of Charles I. was lately opened, the hair was found to have attained a marvellous length. Wulferus speaks of a woman buried at Nuremberg, whose grave was entered after a lapse of forty-three years, when the hair of the deceased was observed streaming through the clefts of the coffin,—which, I presume we are to infer, had become so crammed with *post mortem* tresses that the subsequent accumulation was forced to accommodate itself outside. A sufficient answer to these wild statements is afforded in the physiological fact that all vital action in the body necessarily ceases with life, and therefore the *post mortem* growth of the hair, at least through the regular mode of production, must be considered as an impossibility. Some philosophers regard the hair as a parasite, possessing a kind of vitality of its own, and think it may flourish after the death of the body, like “small fibrous shoots out of an old tree,” as Diembroeck observes, “which continue to grow after the tree is dead, having a proper vegetation of their own, differing from that of the root or trunk from whence they rise.” Wilson fancies that he has “seen an apparent growth of the downy hairs on the dead body, where decomposition has made considerable progress; “but I am unwilling,” he says, “to believe in such a phenomenon without further and more careful investigation.” I do not think him over-cautious in this particular. Turner observes, that persuaded by the historical statements above mentioned, “some authors deny that the hair is a proper

part of the body." This is certainly a summary means of dispatching the question ; it however has the serious demerit of being unphilosophical. A better way of treating the phenomena is to regard them as being the offspring of delusion.

Cases of the growth of the hair in unusual situations* are not rare ; as, for instance, upon the nose, between the eyebrows, on the hands, etc. Small tracts thus distinguished are less common than large ones. Examples are alluded to by Copland in which the patches "covered a large portion of the surface of the body, were of a brownish hue, somewhat elevated above, and quite different from the color of the surrounding skin."† But instances of a *general* excess of hair are extremely rare. Copland mentions but two instances, in both of which the hair was dark-brown. Peter Massias relates that at a place named "Holy Rock," upon the confines of Pisa, a girl was born completely covered with hair. The circumstance is attributed to the fact that her mother, during the time of conception, was in the habit of indulging in morbid ruminations on a picture of St. John the Baptist, in his hairy raiment, that hung at her bedside. In 1815, Ruggieri gave an account of a woman aged twenty-seven, who from shoulders to knees was covered with soft, black, wooly hair, "like that of a poodle dog." In 1829, a man was seen at Ava, by a member of an embassy to that region, who was covered with hair from head to foot. On his face, nose, and ears, it was *eight inches long*, and four or five inches on the shoulders and breast. Fry, the traveller, saw a Fakir who had hair on his breast measuring sixteen inches. Olliver, a contemporaneous French physician, speaks in a recent paper of a young lady with an exqui-

* "Extraneous hair"—*trichosis hirsutus* of Good. Small tracts or patches are called *nævi pilares*, or *hairy nævi*.

† See chapter entitled "Chloasma."

sitely fair skin, and beautiful deep black hair, who, in the course of recovery from a fever, found the whole surface of her body in the peculiar state sometimes exhibited upon exposure in cold weather, being covered with what are commonly termed "goose pimples." These remained, and in the course of a few days each became dark at the summit, and presently a little black hair appeared. In a month, these hairs had grown so fast, she was entirely covered, excepting only her face, her palms, and the soles of her feet, with a coat of hairs an inch in length. We are told by Eble, that during the reign of Maria Theresa, there was a female hussar in the army, possessing a strong monstache, who served several years, rising to the rank of captain. In the last century there lived a woman called the Bearded Virgin of Dresden, whose portrait has been preserved. According to Michelis, her beard, which was three inches long, grew from each side of her chin, and was of snowy whiteness. At first she cut it every month, then every fortnight, and eventually twice in a week. Contrasting strongly with her white beard was a moustache of short black hair. It is said she had a voracious appetite, a loud voice, and was a person of undoubted courage and boldness. A young woman of twenty-two, a native of Switzerland, applied at the Charing Cross Hospital, London, for a certificate of her sex, in order to satisfy the scruples of a clergyman before whom she had come to be married, who could not believe that whiskers and a beard four inches long were consonant with her representations. It seems that she was born with hair upon the face, and that at eight years it had attained a length of two inches. She stated that she had a brother quite as remarkable for the *absence* of beard. She had no moustache. A sister two years younger possessed the same peculiarities. Subsequently to her marriage she was exhibited in

London, under the appellation of the "Hairy Prodigy." These particulars were furnished to the *London Times* by Dr. Chowne. Dr. Grau, of Louisville, has made known the case of a woman, aged seventy-eight, healthy, and the mother of a large family, whose face, at the sides, on the chin, and lips, was covered thickly with coarse hair, which she was obliged to shave off as often as once in a week. She was very masculine in appearance; in fact, the long hair of her head was apparently her sole feminine characteristic.

HAIR MANUFACTURES.

Human hair, and the hair of animals, is variously employed in the arts, constituting an important article of merchandise. Thus the short hair of cattle is a valuable ingredient in the composition of the mortar which is used in the interior of houses. The woof of hair-cloth is made of long hair from the tails of horses and cattle; and its use in violin bows, sieves, etc., is well known. It is obtained from various parts of the world, particularly from South America. The first process, in preparing it for its various future uses, is to assort it carefully, with reference both to quality and length. That which is both white and long is left for the manufacturers of violin bows, and for the spinners and the dyers, who give it various bright colors; while the darker colored long hair is dyed black, to be woven into cloth. The hairs of medium length are intended for weaving into coarse articles requiring hair much shorter than hair-cloth, such as filtering-bags, hair-gloves, and the like. The short hairs are first carded by hand, then tossed with sticks and matted into tufts; afterward they are twisted into a rough rope, which is made up into bundles for sale. It is used principally for stuffing cushions, sofas, etc., being first curled by steeping it in cold water, while still in the form of a

rope, and afterward heated in an oven, the temperature of which is gradually reduced. When the rope is picked to pieces, the hair retains the twist, and is very elastic. It is in this state the best article known, for the purposes just mentioned.

Human hair is largely employed in the manufacture of wigs, false fronts, etc., and of late years has been used to some extent by jewelers, and others, who plait it and insert it in pins, ear-rings, and lockets; it also is braided for safety-chains. It is collected by agents, who at stated periods visit the rural districts of Germany, Belgium, and the northern part of France, and obtain it of the peasant-girls, who will sometimes sell an entire head of hair for a few trinkets, and feel no degradation in the traffic. In England, where more pride exists among this class of people, it can only be obtained of girls of the lowest grade. The average weight of a head of hair such as is sold to these agents, is estimated by one authority at from one and a half to one and three quarter pounds; according to another it rarely exceeds one pound. The wholesale price varies from six to twelve dollars a pound, though occasional specimens bring a far higher sum. A Dutch company, long engaged in the business, formerly sold hair of a golden tint, in England, for eight shillings an ounce, or twice its weight in silver. The lighter varieties come from Germany; the darker from France. Black hair is obtained from Brittany to the amount of 200,000 pounds annually. It is estimated that no less than five tons of hair are imported into London in a year. The traders, it is said, from long practice, are able to discriminate the hair from different districts by its smell, or even by indications still more mysterious to those who are ignorant of the business.

The author of *Plocacosmos* mentions a number of facts in this connection, perhaps more interesting and

curious now than they were to the reader of his own day. "The merit of good hair," he observes, "consists in its being well fed, and neither too coarse nor too slender; the bigness rendering it less susceptible of the artificial curl, and disposing it rather to frizzle, and the smallness making its curl of too short duration. Its length should be about thirty inches; the more it falls short of this the less value it bears. There is no certain price for hair, but it is sold from five shillings to five pounds per ounce, according to its quality. The scarceness of gray and white hairs, have put the dealers in that commodity upon the method of reducing other colors to this. This is done by spreading the hair to bleach on the grass, like linen, after first washing it out in a lixivious water; this lye, with the force of the sun and air, brings the hair to so perfect a whiteness, that the most experienced person may be deceived therein. There is scarce any way of detecting the artifice but by boiling and drying it, which leaves the hair of a color of a dead walnut-tree leaf; there is also a method of dyeing the hair with bismuth, which renders such white hair as borders too much upon the yellow, of a bright silver color. Boiling is the proof of this, too, the bismuth not being able to stand it."

It will be seen, from the foregoing, that the people of the last century were as liable to be deceived as those of our own day. It is but natural to suppose that Stewart had an eye to his own interest, when he penned the following, in extenuation of the rates at which hair was sold—perhaps, in his own shop:—"From the explanation given in the former part of this book, relating to the nature, texture, and nutriment of the hair, it is evident that its tubes may retain part of the humors of the human body, whether noxious and infectious, or sweet and wholesome, from where it was cut: that this is really so, all human hair which comes

from abroad is particularly mentioned by government to perform quarantine, for fear of its bringing the plague, or any other terrible disease. This is the reason why, when it comes into this country, it undergoes such vast preparations and cleaning; as washing, stewing, smoking, staining, boiling, baking, drying, &c., &c. This is entirely to make it beautiful, and fit to use safely; for all these reasons I can venture to pronounce safely, that it is impossible for the hair-merchant to sell the manufacturer, at any time, hair twenty-four inches long and upwards, under five shillings the ounce, beside the manufacturer's reasonable profit it must cost the lady. At the same time, hair falls in price considerably as it grows shorter; thus a braid of good, that is proper wholesome hair, from twenty to sixteen inches long, costs from 15s. to 10s. 6d., and so on in proportion, the price still diminishing with the length of the hair. This is the reason why there is so many ways of making up false hair cheaper than the fair trader can do with credit to himself. The methods usually taken to cheapen hair, are not only the using the hair in its rough, foul state, but this is mixed up with old hair, which, perhaps have been upon twenty different people's heads, either as old braids, men's old false-tails, or the old tails of gentlemen's wigs, which people are daily about buying up, wherever they are found; hence all these are mixed into a braid, which to be sure may easily be sold very low in comparison to the real value of hair; but how a lady would like to wear such a braid, she best knows; however, that a lady or gentleman may form some judgment respecting false hair, of this they may be assured, that all new hair that is good for any thing, looks clean, clear, and delicate, and has on it what is commonly called a fine glossy skin, very much resembling the hue of silk; or it may be compared to the first bloom on new broad-cloth; while that of the

opposite can at best be likened to a sponged coat, from the dinginess of the look. . . As hair is not of the nature of other goods, that you can tell wholly by looking at it, whether new or old, good or bad; hence, when a lady is shown one of these braids at the price of a guinea, when asked, perhaps with reason, above two for one of the same length, she directly buys it as a great bargain, and at the same time she imagines she was imposed on by the other person. In this manner, all other false hair made for the ladies, particularly cushions, is equally adulterated, as they will never be able to judge whether the hair is new or old, or gone through the proper preparations; therefore I need say no more than caution ladies, for their own health and satisfaction, that they buy what they want in this way of a person of credit and reputation."

All that is wanting to make the foregoing a perfect thing in the way of an advertisement of high-priced hair, is an account of a person dying from some dreadful contagious disease, which had been carried to the patient in this cheap, unprepared hair: and perhaps the further stroke of his saying, with his last breath, "Alas! if I had had the sense to buy good hair! Ah! had I but gone to Stewart!" But it is charitable to believe he lacked a basis of fact for this telling stroke of art, rather than that it did not occur to his fancy.

CHAPTER V.

GENERAL VIEW OF THE INVESTMENTS OF THE BODY.

THE Body of Man may be described as comprising three general divisions :—first, an osseous framework, or skeleton; second, various organs intimately concerned with vitality, occupying the interior spaces; and, third, the flesh, in immediate contact with the inflexible bony framework, which supports it and determines the general proportions of the figure.*

The Flesh is composed, in great part, of Fibrons and other Tissues,† supporting blood-vessels, nerves, etc.,

* The bones are intimately connected with the flesh by means of the *periosteum*, a fibrous, firm, white, thin web or layer, which is united to the bone by small prolongations, and by many vessels which penetrate the substance of the latter; and to the contiguous parts of the flesh, by "Areolar" or open-work "tissues." (See next note.)

† The word *tissue* has not a fixed and singular significance, since we may read of a tissue composed of tissues, etc.; but *simple* tissues may, in general terms, be defined as an elementary intelligent arrangement of organized particles supplied by the fluids of the body, constituting continuous, homogeneous material, which, in various ways, alone or in combination, is largely employed in the building up of its various parts. The original particles are many of them *fibrillæ* or fibrils, organized from the fibrine of the blood, and are at first *cells*, which are produced from a germ, supplied by a previous cell. (See further of cells in the fifth paragraph.) The walls of the cell prolong themselves, the cavity contracts laterally, and the result is a little filament. A number of these may form a fibre, (Fig. 2); out of these fibres, various *tissues* are elaborated; though it should be understood that there are tissues of *cells*, which have not been transformed into fibres, as the *striated muscular tissue*, etc. Though a tissue is a consecutive arrangement of material, it is not always found in the form of a *web*, though this is frequently the case. Muscles, tendons, ligaments, etc., are formed of "tissues," as well as the *skin* or the *mucous membranes*.

together with fatty substance, contained in vesicles or cells. Its exterior portions*—or, in other words, those parts, *external* or *internal*, which are exposed to elemental or other action—are completely invested with numerous membranous expansions (or membranes spread out into thin webs, of varying nature and more or less elastic), which have various uses, such as that of a protection to the underlying structure, a medium and machine for the elimination of effete substances, a support for organs of sensation and the blood-vessels which nourish them, and besides minister generally to the economies of the system, supplying various indispensable elements of beauty and convenience.

They are composed mainly of simple fibrous tissues, similar in texture to those of the flesh beneath, but finer and more closely woven, forming a sort of condensed *Areolar* tissue;† blended with it, in varying proportions,

Some of them are *compound* tissues—tissues formed of other tissues. There are “areolar” (or “cellular”), “fibrous,” “mucous,” and other tissues, differing in structure, endowments, and purpose. (See further of tissues, in subsequent notes.)

* The portions in contact with the bones will be understood as *interior*.

† *Areolar* tissue, when examined under the microscope, “is found,” says Carpenter, “to consist of a network of minute fibres and bands, interwoven in every direction, so as to leave innumerable interstices, which communicate with each other.” These spaces are filled with a fluid resembling a “very dilute serum of the blood.” The areolar or cellular is the most common of all the tissues. It is found in almost every part of the body. Its great use, says the author just quoted, “appears to be, to connect together organs and parts of organs, which require a certain degree of motion upon one another, and to envelop, fix, and protect the blood-vessels, nerves, and lymphatics with which these organs are to be supplied.” “It is extensible in all directions, and very elastic, in virtue of the physical arrangement of its elements.” It is made up of two kinds of “fibrous” tissue, the *white* and the *yellow*, which exist *in connection* in the areolar tissue alone. The *white* fibrous tissue (which is in excess) is exceeding tough, and quite inelastic (except sometimes by virtue of its mechanical arrangement), and is found in ligaments, tendons, fibrous membranes, etc., which owe to it their peculiar character. The *yellow* fibrous element, on the contrary, is remark-

are found blood-vessels, lymphatics,* nerves, and smooth muscular fibres.†

The free side‡ of these membranous layers is limited (as modern practical physiologists maintain) by a peculiar structure termed a *Basement-membrane*,—a membranous expansion of extreme delicacy and transparency, the upper or free surface of which is covered with cells, which, collectively, constitute the outermost protective membranous expansion. An example of the latter is the Epidermis or Cuticle. The term *basement-membrane* was devised by Mr. Bowman, to signify the structure on which rests the ultimate layer of cells just mentioned ; and Professor Goodsir named it the *Primary*

ably elastic, though less tough than the white, existing in the form of “long, single, elastic, branched filaments, with a dark, decided border ;” and although it interlaces freely with the fibres of the white element, it is quite independent of the latter, in its original structure.

* This term is defined in the sixth chapter.

† The “Muscular” and the “Nervous” are two tissues of the highest importance in the animal structure. The *ultimate Muscular fibre* “exists under two forms: the *striated* and the *non-striated* [or *smooth*] ; the former makes up the whole substance of those muscles over which the Will has control, or which are usually called into operation through the nerves ; whilst the latter exist in the [those] muscles which the will cannot influence.” The Striated Muscular Fibre contains “an assemblage of very minute elements, which appear to be flattened disk-like cells of very uniform size. These primitive particles are adherent to each other, both by their flat surfaces and by their edges. The former adhesion is usually the most powerful, and causes the substance of the fibre, when it is broken up, to present itself in the form of delicate fibrillæ, each of which is composed of a single row of the primitive particles.”—*Carpenter*.

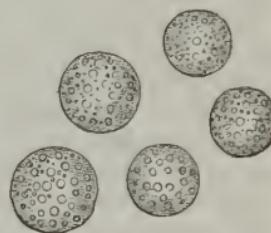
To afford an idea of the marvellous tenuity of the original organized particles of the body, I will state that the “ultimate fibrillæ” of which muscular fibres are composed (not varying greatly in the different animals), are about the 1-10,000 of an inch in diameter. The filaments of the areolar tissue vary from 1-10,000 to 1-5,000 of an inch in diameter. It is impossible for the finite mind to attach definite ideas to admeasurements so extremely small. The fibrils are manifest to the senses only when a powerful microscope has magnified them very many times.

‡ The side opposite the surface on which the membrane lies.

membrane, since it affords the germs of those cells. (See next paragraph.) Though not everywhere discoverable, where its existence seems clear from analogy, it is found existing *alone* in certain parts of the body, and in other parts its presence may be said to have been satisfactorily demonstrated. Since one of its main purposes is to supply the germs for the elaboration of the cells on its surface, it is evidently, in the language of Carpenter, a "transitional rather than a permanent structure," and must be "continually undergoing disintegration" on its *free* surface, while it is as continually renewed "at the side in relation with the blood-vessels."

Of *Cells*, it may be said, briefly, that the growth of every part of the body is due to their action. While the term literally signifies a "cavity" (and the cells in the human structure are, truly enough, minute cavities, at some period of their existence if not always), it refers particularly to the *walls* of the cavity, that constitute an organic structure which is the first or primary form of intelligent arrangement of the elementary particles of the system. The cells, which are variable in form, originate "from a reproductive granule, previously formed by some other cell; this granule attracts to itself, assimilates, and organizes the particles of the nutrient fluid in its neighborhood, and converts some of them into the substance of the cell-wall, whilst it draws others into the cavity of the cell. In this manner the cell gradually increases in size; and whilst it is itself approaching the term of its life, it usually makes preparation for its renewal, by the development of reproductive granules in its interior, which may become

FIG. 1.



Simple isolated cells,
containing reproductive
molecules.

the germs of new cells, when set free from the cavity of the parent, by the rupture of its cell-wall." Carpenter, whose language I have just employed, states that the cells "may have different endowments in different situations, so as to impart very diversified characters to the surfaces which they form;" but (while it must be confessed that the views of physiologists are not in complete harmony with regard to the office of the cells presented by the *basement-membrane*) it is now considered that cells in general are the active agents in the translation of organized material from the amorphous substances supplied to them by the blood-vessels and glands, and in furthermore elaborating that material into "more complicated and higher forms," for important uses in the system.

The various membranes of which I have spoken, though similar in elementary composition, vary to some degree in the relative proportion of those elements, as well as in their arrangement. Carpenter groups them under three principal categories, viz.: the *Skin*, the *Mucous* membranes, and the *Serous* membranes,—"the first of these forming the external integument; the second being continued from it at various points, so as to line all the open cavities of the body; and the third forming closed sacs,* which intervene between surfaces that rub or glide over one another." The two latter

FIG. 2.



Development of fibres from cells:—*a*, circular or oval nucleated cells; *b*, the same becoming pointed; *c*, the same becoming fusiform, the nuclei being still apparent; *d*, the same elongating into fibres, the nuclei having disappeared.

* "The generality of this view is now called in question, both as regards the synovial sacs and the bursæ mucosæ, which all belong to this group."—Draper.

varieties derive their names from the nature of the fluid which moistens their free surfaces.

The *third* of these three varieties of membranes (embracing "Serous" and "Synovial" membranes) consists in extremely thin, transparent webs or pellicles, strong, elastic where elasticity is required; and their free surface, which is smooth and glistening, is moistened with a glairy, lubricating fluid, designed to further the movement of the surfaces upon one another. When examined with a microscope, this surface exhibits a layer of polygonal cells, termed a "tesselated" or "pavement Epithelium." Beneath the epithelium some physiologists are said to have distinguished a basement-membrane. The serous membranes depend, for their strength and elasticity, on the presence of the *yellow* fibrous element (see note to first paragraph), which exists in them in a large proportion. The filaments of the membrane interlace closely, forming a beautiful areolar network, planned so as to contribute something, physically, to the amount of elasticity demanded of the structure.

Under the *second* of the three heads which designate the different classes of membranes, we find enumerated "Mucous Membranes, and their Glandular Appendages." These are thicker than the serous membranes, and not so transparent or so tough. The mucous membranes, says Draper, "are usually enumerated among the *secreting* surfaces. Strictly speaking, however, they are scarcely so much secreting surfaces as the seat of numberless secreting organisms. They line the interior of the digestive, respiratory, urinary, and generative apparatuses, and are characterized by extreme vascular-ity."*

The mucous membrane proper is but one of several

* *Vascular* signifies abounding in vessels.

membranes, forming successive layers. Under it is spread a stratum of "cellular tissue," and upon it is found the inevitable "basement-membrane," with its epithelial cells. The mucous membrane contains connective and elastic tissue, for the support of blood-vessels and nerves. A large portion of its substance is formed by blood-vessels and lymphatics,—so that the fibrous tissue which would impart strength and consistency is much rarer than in the serous membranes. Its reddish color is produced by the blood in its numerous blood-vessels.

The mucous surfaces are always covered with a viscid, glairy fluid, of shades of color varying from white to yellow; it is denser than water, and insoluble in it. It differs specifically, according with the situations in which it is found, and its quantity may be greatly increased by morbid action, as, for instance, in catarrh.

The outer (epithelial) layer of cells of the mucous membrane exhibits in various parts of its surface an appendage possessing wonderful properties. The free margins of the cells are in various parts observed to be fringed with delicate filaments, termed *Cilia*, which,

though so very minute (for the longest have been found to measure but the 1-500th of an inch, while the shortest measure only the 1-13,000th),

Vibratile or ciliated Epithelium : —*a*, nucleated cells, resting on yet fulfil a very important purpose in the animal economy. They are endowed with an extraordinary *motor power*,

—a mass of them waving like a field of grain agitated by frequent gusts. This motion is described as being at times so extremely rapid, that "nothing whatever can be distinguished but the whirl of particles in the surrounding fluid." This motion is quite independent of the will, and even of life

FIG. 3.



itself. The use of these wonderfully minute hairy appendages is apparently that of moving fluids over the surface of the epithelial layer; for they appear, in land animals, on the internal surfaces, their motions being such as to urge forward the various products of secretion towards the outlets of the passages in which they transude.

The ciliary filaments are found in the nasal cavities, the lachrymal ducts and sac, the Eustachian tube, etc., and their use is everywhere the same.

The *Skin*, the first, and, so far as my present purpose extends, most important of the three membranous divisions, constitutes a subject worthy of being reserved for a separate chapter.

CHAPTER VI.

THE SKIN.

CONSIDERING the main purpose of this work, it will quite suffice to adopt the simplest philosophical modern analysis of the structure of the skin, basing my remarks upon it without reference to preceding theories, however ingenious or plausible. In accordance with this idea, I can not do better than adhere to the plan of Carpenter, whose analysis, besides being both simple and intelligible, is fortified with the experience of other eminent men of science, who have lately written upon the subject.

Carpenter considers the Skin, like the mucous membranes, as composed of three elements, which he defines as follows: "The complex fibrous tissue, which, with blood-vessels, lymphatics, and nerves, makes up the *cutis vera*, or corium; a layer of *Basement-membrane* investing this; and an epithelial investment of peculiar

thickness and tenacity, which is known as the *Epidermis* or ‘cuticle.’ ”*

THE CORIUM.

Were we to remove the epidermis or cuticle from any considerable portion of the body, there would be revealed a soft, rather uneven surface, of a pinkish hue, the color being deeper in some parts than in others; under a microscope of moderate power it would exhibit, in many portions, numerous small conical projections, varying in length from 1-33d to 1-22d of a line. (A line is about the 11th of an inch.) On the palm, finger, and sole, as also the nipple, we should observe these little cones (named *papillæ*) much increased in number, as also in size and length, and the most of them would seem to be formed of several single ones combined, having one base but several distinct summits. On the palm, finger, etc., we should also find them arranged in curvilinear *ridges*, with transverse furrows, making

* According to Cruikshank, Bichât, and other experimental anatomists, the “integuments of the body” (by which term is here meant the skin) consist of six layers,—the first being the cuticle, which is the most external; 2d, A *peripheral* layer, similar to the cuticle, but of a finer texture; 3d, The *rete mucosum*, or “mucous network;” 4th, Membrane of cutaneous eruptions; 5th, Skin; 6th, Cellular membrane. The fourth is described as a “reticulated layer” covering the peripheral surface of the papillæ. This layer Cruikshank denominated the “membrane of the small-pox” (or the seat of the small-pox), his experiments upon it having seemed to him quite conclusive as to the propriety of the term. It was confounded by Bichât with the layer next above (*rete mucosum*). The fifth layer, skin, is the same with the corium as mentioned by Carpenter. And as for the third (*rete mucosum*), which was formerly termed the *stratum Malpighii*, out of compliment to Malpighi, who discovered it, it is now called the “internal layer of the cuticle.” Carpenter remarks that it is now well known to be chiefly formed of the younger portion of the epidermis, whose cells are not yet consolidated by the formation of horny matter in their interior. (See note at the end of this chapter.)

small isolated masses, nearly square; and these masses we should find composed of tufts of papillæ, from ten to twenty in number.

These papillæ, so curiously multiplied in the places I have mentioned, are copiously furnished with *nerves*, through which we receive *tactile* impressions,—that is, impressions from the sense of touch. They are thus elevated, in accordance with that law of animal organization which meets the necessity for an increase of function, at any point, by *multiplying the surface*. Wherever the sense of touch is most acute, there we find the papillæ in the greatest profusion.

Besides these numerous *elevations* on the surface of the eorium, we should observe it to be marked with no small number of *depressions*. These are various in their nature; some being *follicles*, or comparatively shallow cavities, having different purposes, such as to contain and nourish the roots of the hair, to secrete oil, etc., while others are regular tubes of greater or less length. These tubes lead mainly from the sudoriparous or sweating glands; through them is drawn off from the system a large amount of watery fluid holding in solution various effete substances. There are also sebaceous glandulæ, the principal use of which is, by conveying upon the surface a lubricating oil, to keep the skin flexible, that it may not become dry, harsh, and cracked, through the action of the elements. The greater number of the sebaceous glandulæ, however, are found in connection with the hair follicles, and pour their oily secretion into the hair-tubes.*

"All these depressions," says Carpenter, "are lined by cells, which are continuous with those of the epidermis." I have already mentioned the intimate relation of cells to organic growth and change. In the hair-

* Wilson says that the tubes of many of the downy hairs are at the same time oil-tubes, frequently performing a double function. .

follicles they are found in process of being changed into the substance of the hair. In the sebaceous follicles they seem not to be themselves changing, but they serve to attract fatty matter from the blood, discharging it on the surface. In the ‘cerumen glands’ they elaborate a waxy matter, which they discharge on the integument lining the meatus of the ear.” And in the sudoriferous glandulæ we find them instrumental in disengaging and bringing to the surface a vast amount of matter, consisting of a watery fluid which holds in solution various substances superfluous in the system.

The greater part of the substance of the corium is composed of *white fibrous tissue* (see note to first paragraph in Chap. V.), reticular,—that is, like network in its arrangement, “the texture being very fine and close near the surface, but more open in its deeper layers, where its areolæ,” or free spaces, “become occupied with clumps of fat-cells,* and where it passes, without any distinct line of separation, into that of the subcutaneous areolar tissue.”† These white fibres, though comparatively inelastic (see note to first paragraph, Chap. V.), contribute to the elasticity of the membrane through the peculiarity of their arrangement. The requisite elasticity of the structure is secured by the commingling of yellow fibres with the white; the former, it will be remembered, possessing the quality of elasticity in a high degree. (See note above mentioned.) It is said, however, by some writers, that they are lacking in strength; and that to supply this deficiency, there is a third set, of a reddish east, possessing both elasticity and strength, and even occasional contraetile power;

* These fat-cells serve the purpose of an *elastic cushion*, to resist the force of blows, severe pressure, etc., and preserve the structure from injury.

† Carpenter.

and still another set of fibres, which, though deficient in the two former qualities, possess the power of independent action. This is manifested by the skin in particular parts, especially when it is under the influence of cold, or mental emotion,—producing the well-known phenomenon termed "*Cutis anserina*," or "goose-pimple." I am of the opinion that these two varieties of fibre, considered as distinct from the two first described, have no real existence, since that existence is rendered unnecessary (which consideration always weighs with Nature!) by a peculiar description of "non-striated [smooth] muscular fibre-cells," discovered by Professor Kölliker, which are united into fasciculi, or bands, and traverse the skin in various directions. These abound in the deeper part of the cutis of the serotum, etc., and in other parts of the system are connected intimately with the hair-follicles. It has been satisfactorily ascertained that the contractile power alluded to appertains to these muscular fibre-cells; and they would seem to have been designed as much for the exercise of this specialty as for any other imaginable purpose.

I cannot forbear mentioning a very curious fact in relation to the *embouchures** of the sudoriferous or sweating ducts. These ducts, generally multiplied by repeated subdivision, are long, convoluted tubes, which have their seat, says Carpenter, "rather beneath the corium, in the midst of the subcutaneous adipose tissue, than in the substance of the skin itself. All the tubuli of each gland unite so as to form but one duct, and this passes upward through the cutis and cuticle, in a somewhat corkscrew-like manner, to open upon the surface of the latter, which it usually reaches obliquely, so that the outer layer of the epidermis forms a sort

* Outer termini.

of little valve, which is lifted by the secreted fluid as it issues forth."

The pinkish hue of the surface of the corium is due to the presence of myriad minute blood-vessels, forming in that region a very close network, which grows more and more open as it recedes from the surface. *Nerves* are distributed through the corium after a similar manner; both these and the blood-vessels pass up into the papillæ before mentioned, the blood-vessels imparting to the nerves the means of their continued activity.† The blood also affords material for the production, by the cell-process, of the overlying epidermis and its appendages.

The Lymphatics also abound in the corium; they originate, says Draper, "in a network of delicate tubes, but are disseminated through all the soft tissues, except the nervous, and are found especially in the skin. The fine initial tubes gradually coalesce, producing those that are of a larger diameter; and these pass through glands, . . . and eventually empty into the veins."

Lymph, the substance conveyed by these ducts, is a colorless albuminous liquid, which transudes or strains from the blood, and is collected by the lymphatics for the support of the mechanism, the lymphatic glands operating to convert the lymph into fibrin.

Though there are many other wonderful features embraced in the structure of the corium and its appendages, I fear I have already taken up more space with the subject than is agreeable to the reader, and must hasten to a consideration of the remaining portions of the structure comprised under my general title.

I need hardly more than mention the layer of base-

† "The supply of blood in the skin is chiefly destined for the nervous system, and is necessary to the act of sensation; whilst that of the internal skin or mucous membrane is rather subservient to the processes of absorption and secretion."—Carpenter.

ment-membrane which invests the corium and constitutes the second of the three divisions recognized at the beginning of this chapter,—having already in another place described the character of this membrane, which is everywhere essentially the same. It remains to speak briefly of the *third* of the divisions alluded to: the epithelial investment known as the *Epidermis*, “cuticle,” or “scarf-skin.”

THE CUTICLE.

Although, as we have seen, the cuticle has a very uneven surface to lie upon, and must necessarily, on its under side (which everywhere exists in close connection with the surface of the corium), be of a precisely similar character, yet upon its outer surface, as all are

FIG. 4.

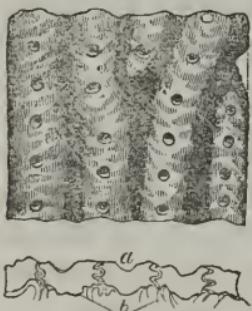


FIG. 5.

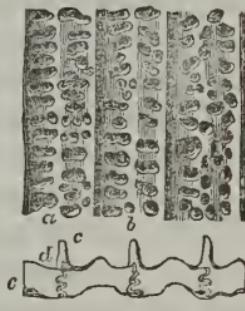


FIG. 4. A small portion of scarf-skin from the palm of the hand, magnified nineteen times. The parallel arrangement of the ridges, and the manner in which they terminate abruptly every here and there, is shown in this figure; as well as the circular pores of the perspiratory tubes. (*a*, a vertical section showing the elevation of the ridges of the preceding. *b* represents the tufts of papillæ of the sensitive skin, which are the cause of the ridges. The spiral coil running up from each tuft is a perspiratory tube.)

FIG. 5. The under surface of a portion of scarf-skin from the palm of the hand, magnified, like the preceding, nineteen times. The ridges and grooves are the reverse of Fig. 4. In each of the three grooves represented in this figure are seen numerous oval-shaped depressions, for the tufts of papillæ of the sensitive skin, and running along the middle of each groove a slightly elevated line, *a*, upon which, at short distances, are the conical sheaths of the perspiratory tubes. At *b* is seen one of the conical sheaths in question. (*c*, a vertical section of the preceding figure. If this be compared with Fig. 4, *a*, the correspondence of the two will be seen. *d*, one of the conical sheaths of a perspiratory tube, projecting from the middle of the groove; similar conical sheaths are seen in the other two grooves.)

aware, it is ordinarily smooth and even. It constitutes a semi-transparent *pellicle*, of nearly uniform thickness and generally quite thin; in some situations, however, as upon the palm, and especially the heel, it is, comparatively speaking, enormously thick. Upon the eyelids, on the contrary, it is extremely thin. Thus we see that the cuticle serves the purpose of a protective covering, its thickness and strength being graduated to the amount of service required of it. It consists, says Draper, of "an aggregation of nucleated particles adhering together, the deepest being granules [cytoblasts, or cell-germs], the intermediate more perfect cells, which gradually become flattened scales as they are examined near the surface." This structure undergoes perpetual change, the outer portions, in the form of scales, exuviating or being constantly shed upon the surface, where they become dry and horny, while the waste is just as uninterruptedly supplied from beneath, the material being furnished especially by the blood in the fine network near and beneath the surface of the corium or derma. The scales above mentioned are similar, in chemical composition, to the nails and hair.

Some of the cells of the lower portion of the cuticle contain coloring matter, which is composed very largely of carbon. The deposit seems to be occasioned by the combined action of sunlight and a high temperature, long continued. It is therefore abundant in the dark races, such as the native Africans,—who, it is well known, are from childhood exposed to both these influences. The cells containing the coloring matter are usually termed "Pigment-cells." The most remarkable development of pigment-cells is on the inner surface of the choroid coat of the eye. Several layers are found in this situation, and have received the designation of "*Pigmentum nigrum*."

In support of the theory which accounts for the exist-

ence of the coloring matter, by supposing it the result of the action of light and heat, the instance of *plants* has been adduced, since they are similarly affected through the same agencies. The phenomenon of *freckles*—which are often produced by a like exposure—is also cited in the same connection. In the case of the native African, it has been thought that the deep color exhibited by his epidermis is the final result of constant exposure, of generation after generation, to the sun's heat and light, which are so intense in those torrid regions which they have so long inhabited.

We have seen that the skin is constantly discharging the function of an *excreting* organ. It may be remarked in passing, that, until very lately, it was the general impression that a large proportion of the watery transudation from the surface of the body escaped from the surfaces of the cuticle, independently of the perspiratory ducts. Professor Draper well observes, that “when we recall the impermeable nature of the horny and dried scales which constitute the outer portion of the cuticle, and that these are constantly coated over with an oily varnish issuing from the sebaceous glands, we may infer that the cutaneous surface between the mouths of the perspiratory ducts is constructed rather for the *hindrance* of evaporation than for its promotion; and though the oily matter with which the skin is thus imbued is justly regarded as having for one of its functions the prevention of injury from the admission of external moisture, it must be equally effectual in stopping the escape of water from within.” He illustrates the tardiness of watery matter in escaping through the cuticle by citing the operation of blisters.

This reasoning must not be deemed conclusive; for there may remain quite a margin between the actual fact and deductions based upon analogy. Indeed, in the same chapter we find various proofs that water and

other fluent substances may find their way through the external surface. Thus, thirst is frequently assuaged upon taking a bath; nor is the amount of water absorbed insignificant, says our author, "since it may give rise to a considerable increase in weight." Various remedial agents, it is well known, readily penetrate the outer surface, and act promptly in the cure of several disorders. Indeed there is a "school" of practice which comprehends the *absorption* of medicaments rather than their internal exhibition. Various diseases of the derma or corium can be treated effectively in no other way. Gaseous substances, also, are absorbed by the skin. Atmospheric oxygen, it is thought, is to some extent introduced to the blood through the skin, which permits likewise the transmission of carbonic acid in the opposite direction.

NOTE.

The following extracts, from the work of M. Rayer, a celebrated French dermatologist, may be of interest to some of my readers. They relate to cases in which the skin has been greatly hypertrophied or morbidly thickened,—a result of various cutaneous diseases. The disease of the first subject was probably *Elephantiasis Arabica*. That of the other was an ulcer of an unusual size, which many years previously had affected the right leg of the subject. It will be seen that the accounts do not perfectly agree. They are perhaps more curious than important. The principal facts in the first case are as follows:

"After having incised the skin in the direction of its thickness, the following layers were discovered, reckoning them from the more internal to the more superficial strata. 1st. Small lobules of adipose tissue, connected together by a healthy laminated tissue, forming a subcutaneous layer. 2d. Above this was placed the corion [corium], represented by a transverse band of pale yellow color, evidently hypertrophied,* the areolæ of which were less distinct than in the natural state; it was besides loaded with a great quantity of serum, which was easily made to flow out by compressing it between the fingers. From its inner surface it sent off whitish fibrous prolongations, which penetrated some depth into the subcutaneous cellular tissue. 3d. Above the corion a second layer was seen, composed of parallel fibres

* Thickened by morbid action.

running from the outer surface of the corion towards the epidermis. This second layer, *evidently formed by the papillæ elongated*, and of a ruddy violet color, was of unequal thickness in several parts, and varied from two to three lines and a half in length [thickness ?]. These two first layers of the skin were rendered distinct, one from the other, both by the opposite directions taken by their fibres, and by a transverse line which resulted from their difference in color. The superficial surface of this second layer presented small eminences, mostly lenticular, separated from one another by deep furrows, evidently formed by the most elongated papillæ, whilst the smaller ones, united in the same line, gave rise to the formation of the wrinkles of which I have spoken. By maceration, the papillæ which formed these elevations became free, and appeared, when examined under water, like the pile of velvet or plush. Above the papillæ a third layer exists, distinct from the epidermis which covers it; it is that which has been designated under the name of the *lamina albida seu cornea*," etc.

Of the results of a dissection of a hypertrophied subject by M. Andral, Rayer says that "the papillary body lying over the corion was greatly developed, evidently distinct from the dermis [corion] Situated over the papillary body, again, and between it and the epidermis, there were three very distinct layers; the innermost of the three penetrating between the eminences of the papillary body, receiving no vessels, and consisting of a fibro-cellular tissue; the second, situated more externally, composed of extremely delicate blackish filaments, interwoven in the true sense of the word, forming a network which was exactly similar to the colored rete of the negro; finally, a third quite close to the epidermis, and, in particular places, forming only a white line similar to the epidermic layer of the papillæ, but thicker in others, and hardened as though formed by a series of superposed scales."

CHAPTER VII.

THE HAIR.

General Observations.

HAIR is the aggregation of the delicate filaments which cover the skin of mammals, and appear, in a partial or general way, in all the lower orders possess-

ing a true epidermis. Insects with a soft skin, as bees, butterflies, etc., are also endowed with hair; nor is it denied, in a modified form, to certain species of plants.* Hairs are of various lengths, and in form are more or less cylindrical. They are found everywhere upon the human body, excepting the palms, soles, and terminal joints of the fingers and toes. They are analogous to the feathers of birds and the scales of reptiles. On the head, the chin and throat of the male, the pubis, and in the arm-pits, they are commonly long, and of a size which permits of an imperfect examination with the unassisted eye; but elsewhere they are usually, but by no means invariably, so fine as to resemble down or furze, often to be seen only when viewed at a certain angle. They may even not be visible at all above the surface of the skin. Their colors are various, not only when considered in relation to different races and persons, but the hairs upon one body may vary considerably in shade, in different situations. The strands of hair may be straight or curling, rough or smooth, stiff or pliant, glossy or dull, and not infrequently may change from one of these opposites to another; though changes from the straight to the curling are extremely rare, and the reverse is by no means common. Hairs also vary greatly in size; not only is this found when comparing the hair of different heads, but the hairs of one head frequently exhibit a similar variety. Even a

* As I shall not have occasion again to mention the hairs of plants and insects, I will here remark, that many insects, both in the larval and the perfect state, possess hairs, which under the microscope have a very singular and often beautiful appearance,—being separated and broken into tufts, spines, protuberances and branches. The hairs of plants consist of elongated cells, attached end to end, some of them even having connected a glandular apparatus for the secretion of viscous or other fluids. These plants and the invertebrates, are claimed to afford many connecting links between hairs and scales. The hairs of plants generally exhibit fluids circulating or rotating in currents.

single hair is not of the same thickness throughout. The reason of this will be given in its proper place.*

A fanciful theory has been advanced by Mr. P. A. Browne of Philadelphia, having for its *animus* (so far as I can judge) the notion that those qualities and characteristics which together constitute a man, are expressed with more fidelity in the *hair* than in any other part of the human structure. He therefore proposes to classify mankind "by the hair and wool of their heads." One result of this system, should it become generally adopted, would necessarily be the lowering of the status of the *nigro* races in the human family, since the hair of the *nigro* more nearly resembles wool than that of the white man.† Fortunately for the former, however, Mr. Browne is not a very sound philosopher. His theory is based upon premises which can easily be proved to be entirely visionary. But though the hair cannot alone be considered an index of the man, I hope to show that it is both a very important and a very admirable and beautiful portion of the human system.

It will be my first object to give the reader as perfect an idea of the original formation of the Hair as the limits assigned to this branch of my work will permit, begging him to bear in mind the difficulty of preserving perfect clearness of statement where the necessity of considerable condensation is imperative.

The Embryonic Development of the Hair.

It would be difficult for the unprofessional reader to

* It has long been known that hairs, particularly of cats, become electrical on being rubbed or stroked.

† He urges that as wool has many imbricated scales, and is therefore easily felted, so the hair of the *nigro* will felt, for the same reason, while that of the white man will not,—proving a radical difference of structure. The deduction does not necessarily flow from the premises; and the premises are not sound, for hair of white people *does* felt, and become matted together so that it is difficult to separate it.

form an adequate conception of the infinite nicely of the delicate operations which are required in investigating the rudimentary formation of the hair,—beginning with the foetus of but two or three months. To Professor Kölliker, a celebrated German Physiologist, author of the profound work entitled "*Mikroskopische Anatomie*," we owe what seems to be a satisfactory elucidation of this important subject. Carpenter, in his great physiological treatise, gives the substance of Professor Kölliker's account, which I shall be obliged to still further condense,—though not, I hope, to the point of total obscurity of his meaning.

He declares the hair *rudiments* to be composed of little processes (or projections) of the Malpighian layer of the epidermis (now defined to be merely the younger portion of the epidermis, and not a distinct structure). These processes are received into corresponding depressions in the corium. A limiting membrane, continuous with the basement-membrane overlying the corium, soon appears, to separate the contained cells of the little projection I have mentioned from the interior of the follicle. Then the hair-matrix begins to lengthen, swelling out at the bottom, and assuming the shape of a flask. Cells are observed to be deposited outside the limiting membrane—to be eventually converted into fibres, or to give place to them, forming the ultimate dermic coats of the follicle,—of which the limiting membrane would seem to be the outline, if not the frame-work. Meanwhile the cells contained *within* the follicle also exhibit important changes. Those which are sufficiently central to constitute the longitudinal *axis* of the follicle, gradually lengthen out till they have assumed the shape of a short, conical, miniature *hair*, which can just be discriminated from the surrounding mass of cells, by a slight difference of shade. It is observed that the other cells, which also have

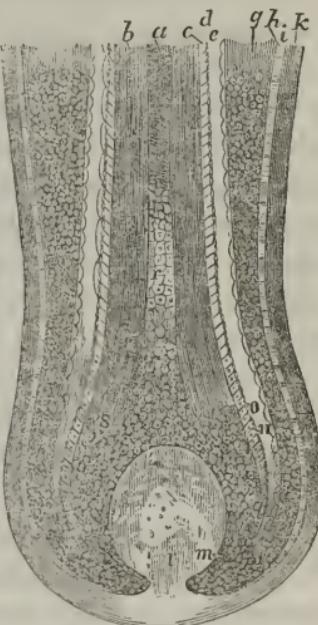
become somewhat elongated, have their major axis situated transversely with respect to that of the follicle.

The *roots* of the hair, which have swollen till they well nigh monopolize the lower portion of the flask-like follicle, are now perceived to rest upon a little eminence elevated from the substance beneath (which is within the limits of the corium proper, or of a projection downward from that tissue), and this little elevation,—which makes for itself a sort of socket in the bottom of the mass of roots of the hair, resembling the hollow in the bottom of a champagne-bottle,—is a *papilla*, exceedingly vascular, and containing nerves. Upon the vivifying action of the papilla, depends the future growth of the hair. The dermic coats or lining of the follicle above mentioned, forming the “root-sheath,” are composed of two layers, the inner being more transparent than the other. These two layers are identical with the two layers of the epidermis,—the outer and darker layer corresponding with the stratum Malpighii, or the *inner* portion of the epidermis, while the inner layer, lying next the roots of the hair, corresponds to the horny and scaly *outer* portion of the epidermis. Indeed, the spheroidal cells of the former are *continuous* with those which afterward form the fibrous portion of the hair. This portion constitutes the principal part of the shaft; while the cells of the *inner* layer of the root-sheath may be traced continuously till they are found transformed into and constituting the envelope of imbricated scales, presented by both the shaft and the bulb of the hair.

The young hairs thus formed continue to grow by the process of continued formation of new cells at the surface of the papilla. The new cells push forward those which have preceded them, progressively occupying the places thus made vacant; and presently the slender filament makes its way through the epidermis, either directly, or

temporarily gliding between the two layers, and is accompanied (and perhaps aided in its progress) by the inner or horny layer of the root-sheath, which also passes through the cuticle.* The cells, as they leave the vicinity of the papilla, become gradually elongated: which accounts for the fact that the shaft is of less diameter than the bulb.

FIG. 6.



Hair-bulb of a well-developed Human Hair, with its follicle:—*a*, medullary substance, containing air-spaces, with indistinct cells; *b*, fibrous cortical substance; *c*, *d*, inner and outer layers of the scaly envelope; *e*, outer layer of the internal root-sheath; *g*, external root sheath; *h*, structureless membrane; *i*, transverse fibre-stratum; *k*, longitudinal fibre-stratum; *l*, hair-papilla; *m*, lowest cells of the hair-bulb, continuous with those of the external root-sheath; *n*, perpendicularly-arranged nucleated cells, which, near *q*, become non-nucleated, and are continuous with the inner layer of the scaly envelope; *o*, small perpendicularly-arranged cells, likewise nucleated, passing into the outer layer of the same; *p*, lowest portion of the inner root-sheath; *r*, commencement of the medullary substance in the condition of colorless cells; *s*, part where the cells of the bulb begin visibly to lengthen themselves, to form the fusiform cells of the shaft.

It is Professor Kölliker's opinion that this passage of the hairs is facilitated by the desquamation or loosening and shedding of the superficial part of the epidermis, occurring in a general manner from time to time, previous to the birth of the foetus; and he is further strengthened in the belief by the fact that the period

* It was formerly supposed that instead of passing through the cuticle the hairs push it or carry it along, in the progress of their growth, so that it constitutes the outer covering of the hair. Bichat dissipated these notions by observing that the hair was of the same diameter below the cuticle as beyond it, and also that it may be pulled out without rupturing the cuticle.

of most thorough exuviation is that during which the hairs are engaged in effecting their passage through the cuticle.*

We are further indebted to Prof. Kölliker for the statement that hairs may be shed and renewed, and also for the description of the process. The hairs are not shed to a great extent before birth, but he has known them to be entirely shed, and renewed, within a few months after. The change occurs first upon the general surface, then upon the eye-brows and head.

Follicles are not newly created; the new hairs occupy those of the old. It is observed by M. Paget that "the death of the old hair is not the consequence of absorption at its root caused by the development of a new one beneath it, but is simply the termination of a series of degenerative changes that have been for some time in progress."†

If we may suppose, with Prof. Kölliker, that, at or before the death of the old hair, there occurs an "increased growth of cells in the soft hair-bulb and in the adjoining part of the root-sheath," and that the lower end of the hair-follicle is pushed downward by this accumulating mass of cells, carrying with it the generative papilla, and thus detaching the latter from the old root, we may as readily believe in the *new* formation as in the *old*, and can fancy the new hair forming and extending itself upward, beneath the exuviae of its predecessor, which meanwhile, becoming diminished in bulk by the process of absorption, makes way for the vigorous new growth, which passes it, in the same channel, and gradually moving it nearer and nearer to

* The sebiparous glands, which in many instances empty their contents into the hair-follicles, appear at a much later period than the latter.

† Carpenter.

the surface, at length discharges it thereon, and thenceforth fully occupies its place.

This is the substance of Prof. Kölliker's ingenious theory of reproduction, which he has more or less thoroughly substantiated by observation. Carpenter remarks that "a similar death and growth seems to take place at intervals through the whole life."

Hairs which have been plucked out are reproduced, provided the follicles and their papillæ have not been injured. According to Heusinger, the cavity of the follicle at first becomes filled with blood, which is gradually absorbed. Presently, upon the summit of the papilla is seen a dark spot, which is a cluster of newly-formed epidermic cells, "containing pigmentary matter;" this mass of cells gradually elongates, and is developed into the several parts of a new hair, with bulb-sheath and every essential.

Hairs may be transplanted; but whether the seeming new growth is real, or only factitious, I should judge to be still a debatable point. It is asserted that they will "contract organic adhesion in the new tissues;" but this, if admitted, does not necessarily imply a genuine reinstatement and a resumption of existence upon the original basis.

It is asserted by Eble, that a hair which has "reached its full development," is shed, through a contraction or constriction that takes place just above the bulb: a proposition, I should say, not susceptible of easy demonstration. If "reaching full development" means ceasing to grow (and it could hardly mean anything else), the statement would seem plausible; but when, if ever, does a hair cease to grow?

The Mechanical Structure of the Hair.

The surface of the shaft of the hair, apparently so smooth, is discovered, with the microscope, to possess a

serrated outline, or in other words, its boundaries will appear slightly notched,—suggesting the idea of a succession of layers, overlapping one another like the tiles or shingles of a roof. This imbricated structure is apparent to a nice touch,—the strand feeling rough when drawn between the thumb and finger from the point toward the root. Looking directly upon the surface, the edges of these different layers give the effect of delicate lines, which are sometimes arranged transversely, but may also be observed running obliquely, or even spirally around the shaft. These lines are the edges of flattened cells, resembling scales,* which constitute the outer horny covering of the hair, and are identical in composition with the outer layer of the epidermis. This outer covering is a transparent layer,—so thin upon the hairs of the head, that *eight thousand* of them piled together would measure but one inch in thickness. (See Fig. 7.)

Dunglison† observes that some experimentalists have failed to detect the striated appearance mentioned above, even with the aid of a microscope; and cites Dr. Bostock, who declares that though he had the use of a very fine microscope, he was unable to observe it. Bichât, on the other hand, and “more recently Dr. Goring and most histologists,” have been more successful, as also Dr. D. himself, who possesses an instrument of unusual power.

The condition of the hair termed “felting,” in which it appears matted or felted together so intimately as almost to defy the most patient efforts toward its separation, is now considered to be furthered, if not actually occasioned, by the imbrication or bristling of the surface

* In the hairs of bats, the projections of the scales are often seen
“arranged in whorls around the stem.”—*Am. Enc.*

† *Human Physiology.*

of the hairs which has just been described. The same cause is also assigned for the insinuation of hairs into wounds, under the nails, etc.

Remembering the exceeding thinness of this coating, we perceive that it forms but an inconsiderable portion of the bulk of the hair. Its purpose is doubtless in part proteetive, like the outer layer of the epidermis, and to it is owing the smoothness and glossiness which contribute so largely to the beauty of every variety of tress.

The principal portion of the substance of the hair* consists of a cylinder of fibrous texture, of which the imbricated layer just described constitutes the coating.

FIG. 7. A small portion of the shaft of a human hair, magnified three hundred and ten times. The waving lines caused by the free edges of the overlapping scales are seen, as is their projection along the edge of the hair.

FIG. 8. The appearance of the fibrous structure of a human hair, magnified three hundred and ten times. The dark streaks are the seat of color of the hair, and in proportion to their number the hair is lighter or darker in its degree of shade.



FIG. 8.



Each fibre of this texture is said by Prof. Kölliker to consist of a fasciculus or united series of flattened cells, of a furiform or jagged outline. Interspersed with these *striæ* of fibres, he finds a multitude of *lacunulae* or small excavations, or spaces containing air. The air-spaces within cause a hair to appear of a lighter or darker shade, according as the light by which we view it is reflected from its surface or transmitted through it.

The real color of this portion of the hair, though

* About two-thirds of its bulk.

apparently more or less affected at times by the circumstance just alluded to, is mainly owing to the presence of pigmentary granules, either diffused through its substance, or collected into occasional patches. The subject of the color of the hair will be treated more at length in a future chapter.

The cylinder we have been describing, is styled, with its outer coating, the *cortical* portion of the hair, for its substance corresponds, in its elements, with the skin whence it is derived. Within the cortical we find the *medullary* or pith-like portion, which occupies the interior spaces of the strand. If we consider the fibrous portion of the hair as constituting a hollow cylinder, and that the canal thus formed in its interior is occupied by a substance less fine in texture, abounding in small air-spaces, and bearing the same relation to the cylinder that the pith of an alder bears to the rest of the reed, we shall obtain an approximate notion of the cortical and medullary portions of the hair, considered with reference to one another. The medullary part is composed of cells, like the cortical; but those of the former retain more or less of the original spherical shape, and hence would appear to be less modified by the process of growth than the others. Its hue is usually darker than that of the outer portions of the hair, chiefly in consequence of the larger number of its contained air-spaces, but in part also because its cells possess a greater quantity of pigmentary matter. Near the roots, it is comparatively colorless, but it rapidly acquires color as it ascends, in the process of growth.*

FIG. 9.



FIG. 9. A small fragment of the fibrous structure of a human hair, magnified three hundred and ten times.

* "This portion," says the *Edinburgh Encyclopaedia*, "is essentially distinguished from the peripheral tube by its possessing *vital* properties." The notion of any distinction of this sort I consider to be chi-

All hairs do not alike possess a medullary portion ; for even the hairs of the head do not always exhibit it, while in the finer hairs upon the general surface it is commonly wanting altogether.

The distinction between the cortical and medullary portions of the hair is exhibited in a still greater degree in the quills of the porcupine (hairs on a large scale), and the spiny hairs of the hedgehog ; both spines and quills are identical in composition and formation with human hair. The cortical part, so firm and strong, abounds in the horny substance,—which in a less degree is apparent in the corresponding part of the human hair,—while the medullary portion is simply a collection of very large cells, containing, when fully matured, nothing but air.

The hairs of all animals, whatever their nature, possess these two parts, cortex and medulla. In one variety the cortical part may predominate, as in the hairs of the horse, or the hog ; while in another, as in the soft hair of the sable, the fibrous portion is comparatively small. The hairs of the musk and reindeer seem to be largely, if not entirely, composed of delicate cells of a polygonal

FIG. 10. Hair of the fallow-deer, magnified thirty-eight times. The middle layer of this hair, instead of being fibrous, is made up of polyhedral cells, which are simply globular cells, pressed into an angular form by contact, like the cells of a honey-comb. These hairs are consequently excessively light and brittle.

FIG. 11. A portion of the shaft (magnified) of a very small pheasant-feather, showing the exact similitude between its pith and the cellular structure of the hair of the deer.

FIG. 10.



FIG. 11.



form. In the hairs of some other animals there are partial or complete transverse partitions which separate the cortical part into sections. In the hairs of the peccary and the quills of the porcupine (as mentioned

merical. The true view can be inferred from the preceding portions of this chapter.

above) the cortical part invades the domain of the medullary, sending inward thin processes of its substance, which form chambers that are filled with the medullary portion in the former instance, but in the latter often with air only.

There is a curious passage in *Plocacosmos*,* a work mentioned in preceding pages, embracing the earlier notions of hair-structure. The author learns from Malpighi that the hairs are tubular, or composed of a number of extremely minute tubes, or pipes. In hairs from the mane and tail of a horse, and in the bristles of a boar, he (Malpighi) discovered as many as twenty of these tubes in one hair. The author adds that "in the hedgehog prickles also, which are of the nature of hairs, these tubes are very accurately discovered, and may seem to have a medullary part, valves and cells." The "valve" is a new element in the structure of hairs; but so far as relates to the rest of this statement, I have nowhere seen it distinctly refuted. It derives support from analogy; for the horn of the rhinoceros, which is described in modern works as an assemblage of compact hairs, not differing in structure from the finest wool, is remarkably similar in plan.

The same author speaks of a mouse's hairs as appearing in joints, "as it were like the back-bone. . . They are not smooth, but jagged on both sides, and terminate in the sharpest points imaginable." Hairs taken from the belly of a mouse, being less opaque than is usual, were selected for examination by Dr. Denham, who says that the "darker or medullary parts or lines are no other than fibres convolved around, and lying closer together than in the other parts of the hair." As they traverse the whole extent of the hair, he imagines that

* Published in 1782.

they may serve to make a gentle evacuation of some humour out of the body." Hence, as he suggests, "the hair of hairy animals may not only serve as a fence against cold, &c., but as an organ of insensible perspiration."

"The hairs of men, horses, sheep, &c.," says the author of *Plocacosmos*, "are composed of long, small, tubular fibres, or smaller hairs, encompassed with a rind or bark; and from this structure, a split hair appears like a stick, shivered by beating. . . . Hairs of the Indian deer are perforated from side to side; and those of our English ones seem covered with a scaly bark or rind. The whiskers of a cat, cut transversely, have, in the middle, something that resembles the pith of elder; and the quills of the hedgehog and porcupine have somewhat of a pith in a star-like form." The "pith-like" substance in the middle of the whisker-hairs of a cat, is probably the nerve, which endows them with such exquisite sensibility.

The cells of the different formations comprised in the structure of the hair, have alike the power of drawing horny matter into their cavities. It is plain, however, that they must possess it in different degrees.

The process of growth of the hair may be described in brief as follows: At the base there is "a continual formation of soft fibrous tissue, by which the length of the cylinder is increased; whilst at a short distance above it, there is a continual consolidation of this (as it progressively arrives at that point) by the deposit of a peculiar secretion in its substance."*

Mandl, a celebrated physiological writer, has a very odd theory in regard to the structure and mode of growth of the hair. According to him, the hair consists of a *cortical* portion, which is *cellular*, and a

* Carpenter.

medullary portion, which is *tubular*. The fluids of the hair ascend through the latter, and are “deposited at the free extremity of the shaft in successive layers, each layer becoming gradually smaller in diameter, until the hair eventually assumes the form of a fine point.” He assumes this theory to be proved by the formation of a pointed end after the hairs have been cut, and also mentions, in corroboration, that the whitening of the hair sometimes begins at the point, showing the “transmission of colorless fluids to the end of the hair.” Wilson professes to have convinced himself that Mandl’s hypothesis is untenable. He observes that “growth never takes place at the point of the hair, and, consequently, the hair cannot *grow white* at the point. It may exhibit indications of bleaching in that situation from external conditions, sooner than in the rest of the shaft, but the process is purely physical.” In regard to the formation of a pointed end after the hair has been cut, it is probably the result of a partial disintegration of the particles, produced by abrasion, permitting the end to be worn off, gradually, to a point more or less fine. It is due to Mandl to mention that he also admits that the hair may increase at the root by apposition.

CHAPTER VIII.

DESCRIPTION OF THE HAIR, CONTINUED.

THE hairs of the head descend to between one-twentieth and one-tenth of an inch below the surface, their roots being situated in the deeper portions of the corium; and not infrequently they are found to extend into the subcutaneous adipose tissue. The hairs of the general surface rarely extend beyond the middle portions of the

corium, but those of the whiskers, beard, and pubes, generally are prolonged beyond it. The follicles, in all cases, correspond in extent, and in cases where the roots of the hair reach the subcutaneous tissue, a delicate sheath is extended around them from the fibrous tissue of the follicle. The mass of minute granules and cells that constitute the *pulp* of the hair is about the one-hundredth of an inch in depth. It occupies the bottom of the follicle, which there takes the shape of a slightly dilated caecal pouch. "The structure of the pulp, and the mode of growth of the hair," says Wilson, "remind us forcibly of the formation and growth of the teeth, and furnish an additional reason for regarding the latter as dermal appendages."

Two, and even three hairs, may often be found, at the surface, issuing from the same aperture; but not far below the level of the epidermis the follicle is always found to divide, each hair thence downward possessing a tubule of its own. This is even the case where, as within the nose, a much larger number of hairs are sometimes found occupying but one aperture at the surface.

The *quantity* of the hair, considered apart from causes which may supervene to thin it, depends on the proximity of the follicles, and also upon the number of follicles which open by one common aperture on the skin. Experiments in the counting of hairs upon a given extent of surface have frequently been made; and while such experiments can give rise to but an approximate general notion upon the subject, they are not without interest, provided we can be certain the instances have not been those of extreme and exceptional cases. Withof found 588 black hairs on a square inch of skin; 648 chestnut hairs; and 728 flaxen. Jahn, another experimentalist, having an unusually hairy man for a subject, found on the summit of his head, upon a given extent

of skin (one-quarter of a square inch), 321 hairs (color not mentioned), on the back of the head 242, and on the front 238. On the chin, in the same space, he counted 52 hairs; on the forearm 31, on the outer border of the hand 20, and on the front of the thigh 21. This interesting experiment shows that the hairs are distributed very unequally over the surface. Four years afterward, it is added, the subject having meanwhile married, the hairs on the chin and pubes had increased in number, but on all other parts had diminished. The experiments of Professor Withof, and my own, have led to results which almost perfectly accord. I found a square inch of scalp, on which the hair had been dark brown, to contain 744 hair-tubes or apertures: which of course would give the same number of hairs, provided that each aperture were occupied by but a single hair. This may have been the case, as the crop of hair had been but thin. At the same rate, as the surface of the scalp measures about 120 square inches, the number of hairs growing upon the entire head would number little short of 90,000. But if we take a somewhat more prolific surface, and allot *two* hairs to every alternate follicle, we should, by a similar calculation, find the scalp supporting the enormous number of 133,920 hairs! A *thick* head of hair might number, allowing but two hairs to each aperture, 178,560 hairs.

In consequence of the hair-tubes approaching the surface obliquely, instead of directly and perpendicularly, we find the hairs more or less *inclined*, continuing the same general direction which they had pursued before emerging from their sheaths. In this particular, there seems to be a general law of arrangement, which is but rarely departed from.* It may be studied at the best advantage on the head of an infant. We shall find

* What are termed, in common phrase, "cow-licks," are illustrative instances.

that while the general inclination of the hairs, with respect to the surface, is essentially the same, their *direction* gradually varies, as the eye traverses the surface, so that we may fancy them divided into departments, with definite boundaries which they mark for themselves, preserving in each a method of arrangement peculiar to itself, but which happily harmonizes with that of the adjacent ones, and contributes to the unity and completeness of the general effect. Thus, taking the head alone, we find a plan of radiation from the crown, downward and outward, in every direction, the hairs making a gentle sweep toward the left behind, and in front toward the right. From each side of a vertical line which will be perceived running from the centre upward toward the crown, the little hairs curve gently to the right and left, their lower border (recurring to our idea of departments) forming the upper half of the eye-brow. Other radiating centres are found here and there. Thus, one is presented at the inner angle of the eye. "The upper and inner rays from this centre ascend to the line between the eye-brows, where they meet those which are proceeding from the opposite centre, and those also which are diverging from the vertical central line of the forehead; so that here a lozenge is formed, which is the point of approximation of hairs from four different quarters. . . The upper and outer rays from the angle of the eye curve along the upper lid, forming, by their upper margin, the lower half of the eyebrow, and at the outer angle of the eye being lost in the converging currents of the whisker. . . The rays from the inner margin of the vertical line of the side of the nose, mouth, and chin, are directed inwards upon those parts. On the upper lip, they are met by a current directed from the apertures of the nose, outwards, and forming the sweep of the moustachio; a similar disposition is observed in the middle

line of the lower lip, near its free edge, while the beard is formed by the convergence of two side currents meeting at the middle line."* Numerous other currents and centres of radiation, not only in this region, but upon the body in general, might also be mentioned. No part of the hair-bearing surface that could be named is unable to contribute something to the general description.

Hairs, as I have before remarked, are found to vary greatly in thickness, whether we compare the hair of different persons, or confine our attention to that of but one. The difficulty of arriving at nicely accurate measurements of this kind is twofold: the spaces to be compared are so nearly infinitesimal, and the hairs are so rarely perfectly cylindrical, or even approximate to that form. Besides, no single hairs are found to be of the same diameter throughout their length. In a length of six inches, hairs which for this space were apparently quite uniform, actually varied in diameter from 1-500 to 1-320, and even from 1-400 to 1-190 of an inch. Wilson mentions a white hair, less uniform in appearance, which exhibited a similar range. The diameter of its point was 1-3000 of an inch.

Notwithstanding this, results have been reached which, though not of paramount value from a mathematical point of view, are yet of considerable interest to the curious reader. The hairs of children have been compared with those of adults; those of the two sexes have also been submitted to the same process; different nations have been taxed to contribute material for general experiment; and many hairs from one head have been carefully measured, in order to make the comparison as significant as possible, and the general results as satisfactory as the exigencies of sci-

* Wilson.

ence might demand. Some of the conclusions from these elaborate experiments may be stated as follows:

1. The hair of the female, viewing the whole range of subjects, is coarser than that of the male; the hair of children is finer than that of adults. The following table of measurements supplies the data for this statement:—

	No. of heads ex'd.	No. of hairs.	Range of thickness.
Child.....	6.....	269.....	$\frac{1}{550}$ to $\frac{1}{400}$.
Man.....	18.....	1016.....	$\frac{1}{525}$ " $\frac{1}{300}$.
Woman.....	18.....	940.....	$\frac{1}{500}$ " $\frac{1}{250}$.*

This seems to prove that the prevalent notion with regard to the increase in coarseness of the hair, produced by frequent cutting, is erroneous: else we must conclude that the hair of the male is originally *very much* finer than that of the female,—a position which an extensive comparative observation of the hair of the sexes in childhood would probably render untenable. I have not myself instituted experiments with this avowed object, nor have I ever heard of any; but, had an extraordinary difference of this sort been apparent to senses of the average acuteness, I think I should long ago have discovered it.

2. Considered with reference to the various well-known colors, flaxen is the finest and black the coarsest hair. Of course it should be expected that very fine black hair would now and then be found, as well as very coarse flaxen; but these instances are not numerous enough to disturb the general proposition. Of two thousand hairs of the head, taken from thirty-eight persons, the finest three (all from adult males), were but 1-1500th of an inch in diameter. One was black, the two others brown. The other limit of the range of the finer hairs was 1-500th of an inch. Seven persons

* Wilson.

had hair of about this degree of fineness,—two men with black hair, and five women, four with brown and one with chestnut hair. The coarsest hairs in the two thousand, were from 1-400th to 1-140th of an inch in diameter; the former limit (1-400) was afforded by a female child with *flaxen* hair, and the latter (1-140) belonged to a female adult with brown hair. Though these instances certainly indicate the absurdity of seeking an infallible rule for judging upon the degree of coarseness or fineness of the hair from its *color*, yet the experiments of Withof and other eminent *savans*, conducted on a scale of great magnitude, seem to have established the soundness of the following table, which gives us the average limits of diameter for hairs of different colors:—

Flaxen	$\frac{1}{550}$	to	$\frac{1}{400}$	of an inch.
Chestnut	$\frac{1}{525}$	to	$\frac{1}{350}$	" "
Red	$\frac{1}{450}$	to	$\frac{1}{400}$	" "
Dark brown	$\frac{1}{505}$	to	$\frac{1}{300}$	" "
Light brown.....	$\frac{1}{500}$	to	$\frac{1}{250}$	" "
White	$\frac{1}{450}$	to	$\frac{1}{300}$	" "
Black	$\frac{1}{400}$	to	$\frac{1}{350}$	" "

This table decides that flaxen is the finest hair and black the coarsest; and shows that light brown hair exhibits the greatest range in point of coarseness: dark brown being not far behind, and chestnut coming next.

It may be observed, of *gray* hairs, that their diameter is the same as before the change in color; but white hairs that appear on the heads of the aged, mingled with hairs of the original shade, are generally coarser,—“suggesting the inference,” says Wilson, “that deficiency of pigmentary is compensated by excess of albuminous principle.”

3. The degree of variation in the diameter of the hairs of different regions of the body, compared with

the diameter of those of the head as a standard, is smaller than might be supposed. In the following table, only the average term is in each instance employed:—

	Man, chestnut.	Man, black.	Man, brown.	Woman, brown.
Head.....	$\frac{1}{5\frac{1}{2}5}$	$\frac{1}{3\frac{1}{2}0}$	$\frac{1}{4\frac{1}{0}0}$	$\frac{1}{2\frac{1}{3}0}$
Beard.....	$\frac{1}{2\frac{1}{0}0}$	$\frac{1}{2\frac{1}{0}0}$		
Eyebrow.....	$\frac{1}{2\frac{1}{5}0}$		$\frac{1}{3\frac{1}{0}0}$	
Breast.....		$\frac{1}{2\frac{1}{5}0}$	$\frac{1}{4\frac{1}{0}0}$	$\frac{1}{4\frac{1}{0}0}$
Whisker.....	$\frac{1}{3\frac{1}{0}0}$	$\frac{1}{2\frac{1}{0}0}$		
Eyelashes.....		$\frac{1}{3\frac{1}{0}0}$		
Axilla.....	$\frac{1}{4\frac{1}{5}0}$	$\frac{1}{3\frac{1}{0}0}$		$\frac{1}{3\frac{1}{0}0}$
Leg.....	$\frac{1}{5\frac{1}{0}0}$	$\frac{1}{4\frac{1}{5}0}$		
Vibrissæ auris.	$\frac{1}{1\frac{2}{5}0}$			

The measurements in these various cases were made close to the skin. The diameter of the hair is there usually somewhat less than towards the middle, but it is reasonable to suppose that more uniform results would be secured by measuring as near the surface as possible, since various circumstances may contribute to affect its size, at any period of its subsequent growth.

The hairs of New-Zealanders, South American Indians, and other savages, have also been carefully measured, and do not differ so greatly in diameter from those of the cultivated nations as might be supposed. Still, the difference is noticeable, as will be perceived from the following table:—

	No. hairs examined.	Finest.	Coarsest.
South Am. Indians.....	155.....	$1\frac{1}{0}00$ to $4\frac{1}{5}0$	$4\frac{1}{0}0$ to $1\frac{1}{4}0$
New-Zealanders.....	50.....	$\frac{1}{4\frac{5}{0}}$	$\frac{1}{2\frac{1}{0}0}$

It will be remembered that the range of measurement of the two thousand hairs previously mentioned was, for the finest, 1-1500 to 1-500 of an inch, and for the coarsest 1-400 to 1-140; so that coarser hair was actually found in Great Britain (where the experiment was made) than

in South America. In this connection, the head of a scrofulous female child was also examined, and of ninety-seven hairs (flaxen) the finest measured 1.1750 of an inch, and the coarsest 1.450,—showing the influence, upon the hair, of a morbid habit of the system. Reducing all the various extreme measurements to averages,—which doubtless afford us the most valuable data,—we find the comparative diameters of the hairs of these four descriptions of persons to stand as follows:—

British	$\frac{1}{5\frac{5}{6}}$	to	$\frac{1}{2\frac{5}{6}}$
South American Indian	$\frac{1}{4\frac{5}{6}}$	to	$\frac{1}{3\frac{1}{6}}$
New Zealander			$\frac{1}{3\frac{5}{6}}$
Serofulous child.....			$\frac{1}{6\frac{1}{6}}$

The celebrated Leeuwenhoeck, the microscopist, and others, have endeavored to establish a general average of thickness for the hair of the entire human race. According to the above table (given by Wilson), the average is 1.400 of an inch. Leeuwenhoeck and Rosenmüller estimate it at 1.600 of a Paris inch (or 1.640, English), and Weber offers the following table, which affords an average not far from that of Wilson's:—

His own hair.....	$\frac{1}{5\frac{5}{5}}$	to	$\frac{1}{3\frac{1}{6}}$	Paris inch.
Mulatto.....	$\frac{1}{4\frac{5}{6}}$	to	$\frac{1}{2\frac{1}{9}}$	" "
Senegambian negro, woolly.....	$\frac{1}{7\frac{1}{4}}$	to	$\frac{1}{3\frac{1}{3}}$	" "
Nubian Negroes.....	$\frac{1}{5\frac{1}{25}}$	to	$\frac{1}{2\frac{9}{4}}$	" "

The third item of Rosenmüller's table possesses a peculiar interest:—

Adult	$\frac{1}{6\frac{1}{6}}$	to	$\frac{1}{4\frac{1}{6}}$	Paris inch.
Child	$\frac{1}{8\frac{1}{6}}$	to	$\frac{1}{7\frac{1}{6}}$	" "
<i>Lanugo from body of fetus.</i>	$\frac{1}{16\frac{1}{6}}$			" "

From the last of these measurements it is easy to infer the main cause of the tapering of the hair toward the point. At first, the producing organ being very

small, the young hair must necessarily be correspondingly minute; but while the portion thus early formed retains its original size, or even grows smaller from abrasion, it is plain that, owing to the gradual increase in the size of the producing organ, the hair as it increases in length must also progressively increase in size in the same ratio,—even leaving out of the account an element afforded by the increase in the absorbing power of the cells, which draw up horny and perhaps albuminous matter, and secrete it among the fibres of the hair.

From the following examples it will be seen that the hairs upon a single head may vary as much in diameter as hairs from different heads:—

No. of hairs.	Finest.	Coarsest.	Medium range.	Average.
67	$\frac{1}{1500}$	$\frac{1}{230}$	$\frac{1}{250}$ to $\frac{1}{550}$	$\frac{1}{450}$
81	$\frac{1}{1500}$	$\frac{1}{300}$	$\frac{1}{350}$ to $\frac{1}{600}$	$\frac{1}{400}$
79	$\frac{1}{1250}$	$\frac{1}{230}$	$\frac{1}{350}$ to $\frac{1}{750}$	$\frac{1}{450}$
97	$\frac{1}{750}$	$\frac{1}{250}$	$\frac{1}{300}$ to $\frac{1}{350}$	$\frac{1}{400}$
57	$\frac{1}{550}$	$\frac{1}{210}$	$\frac{1}{230}$ to $\frac{1}{270}$	$\frac{1}{250}$
64	$\frac{1}{500}$	$\frac{1}{240}$	$\frac{1}{300}$ to $\frac{1}{400}$	$\frac{1}{350}$

Hairs are rarely perfectly cylindrical in form, a transverse section possessing an outline which is more or less oval. The departure is least in straight hair and greatest in crisp and curling hair. Some varieties exhibit a longitudinal groove, the transverse section having a shape like the outline of a bean. The groove is deepest in the hair of the negro; it has been thought that its peculiar twist is owing to "a greater tension of the fibres along this groove." The closely-matted hair of the Bushmen is fairly ribbon-like, the strands are so very flat.

It may be remarked that differences in color do not correspond with these differences in form: the black hair of white people being not like the usually black hair of negroes; and Van Amringe observes that the

hair of an albino, "whether red or flaxen, is as knotty, as wiry, and as woolly, as that of his sable parents."

"Looking back," says Wilson, "on the structure of the hair, we cannot but be forcibly impressed with the perfection of the organization which it exhibits; and this feeling increases when we reflect on the elasticity and strength of so delicate and slender a thread." It is the fibrous portion of the hair which imparts strength and elasticity. A hair ten inches long may be stretched to thirteen inches. A hair stretched till it is one-fifth longer, will, from its inherent elasticity, return to within one-seventeenth of its original length. Experiments made to test the strength of the hair had almost incredible results. A single hair of a man aged fifty-seven, supported a weight of 22,222 grains! or more than 2 lbs., 14 oz. avoirdupois. A hair of a man aged twenty-two supported 14,285 grains; one of a boy, aged eight, supported 7812 grains. A human hair fifty-seven times thicker than a silkworm's thread, supported a weight of 2069 grains. A horse-hair, seven times thicker, 7970 grains.

It was discovered by Saussure, that when a human hair has been freed from grease by maceration in an alkaline solution, it forms a very delicate *hygrometer*, from its property of elongating upon absorbing moisture, and returning to its original length in a dry atmosphere.

CHAPTER IX.

CHEMICAL COMPOSITION, AND COLOR, OF THE HAIR.

No satisfactory analysis of the hair seems to have thus far been made. The majority of physiological writers content themselves with a singularly vague

statement by the French chemist Vauquelin, apparently considering it sufficiently to the point for all practical purposes. An article in the *Edinburgh Encyclopædia*, made up in good part from Bichât's *Anatomie Générale*, "Système pileux," contains the following:—"By chemical analysis the hair is found to contain a *peculiar oil*, which is *supposed* by Vauquelin to be the coloring matter of the hair, as he observed it to be of a blackish green in black hair, red in red hair, and of a whitish color in white hair. Besides this oil, the hair is said to contain *inspissated mucous*, though probably its peripheral membrane also contains albumen. Vauquelin also detected, in black hair [which seems to have been the only variety subjected to his analysis], iron in an *unknown state*, oxide of manganese, phosphate of lime, a small proportion of carbonate of lime, and a sensible quantity of silica, and of sulphur."

"M. Vauquelin analyzed the hair attentively," says Dunglison, "and found it to consist chiefly of an animal matter, united to a portion of oil, which appeared to contribute to its flexibility and cohesion. Besides this, there is another substance, of an oily nature, from which he considers the color of the hair is derived. The animal matter, according to that chemist, is a species of mucous; but other chemists believe it to be chiefly albumen."

Wilson exhibits Vauquelin's analysis in a different and rather more satisfactory shape:—"According to the analysis of Vauquelin, the chemical constituents of the hair are, animal matter, in considerable proportion; a greenish black oil; a white, concrete oil, in small quantity; phosphate of lime; carbonate of lime, a trace; oxide of manganese; iron; sulphur, and silex. Red hair contains a reddish oil, a large proportion of sulphur, and a small quantity of iron. White hair, again, exhibits a white oil, with phosphate of magnesia. The

gray hair of old persons contains a maximum proportion of phosphate of lime."

But with all this animal matter—for according to these statements the hair would seem to consist of but little else—I would ask how is the indestructibility of the hair to be accounted for? We know that while all the rest of the corporeal substance, with the bones and teeth, readily changes to dust, leaving no sign of its former appearance and composition, the hair will remain apparently unchanged for years, even in circumstances which it would seem must infallibly affect animal tissues of organic matter. Who has ever heard of the decay of the hair? After years of exposure to every variety of atmospheric temperature, and to the extremes of moisture and dryness,—even after lying for years in the damp and mouldy tomb,—we find it essentially perfect: as though it had just been severed from a living head.

It might be fancied that the scaly and indurated outer coating of the hair insures the preservation of the hair. But when we remember the exceeding thinness of this coating, and that the two ends of the hair afford access to the air, which would quickly seize upon any corruptible material to be found within, we see that we must avail ourselves of some more plausible theory.*

Scherer, who obtained by chemical analysis the original elements of the hair, gives the proportions of its various constituents as follows:—

Carbon	50.652
Hydrogen.....	6.769
Nitrogen	17.936
Oxygen	{ 24.643
Sulphur	

* Hair also powerfully resists the tendency to *petrifaction*. The body of a man named Christopher Delano, buried on the island of

The variety of hair submitted to this analysis is not specified. But we are able to perceive that the mineral portion is not inconsiderable, though no mention is here made of iron, manganese, or lead,—of lime, of phosphorus, or silex,—all of which have been found by Vanquelin in the hair. Judging from the large amount of sulphur, the variety of hair was probably light. The carbon I presume we must infer to have belonged to the animal matter of the hair, but I think it implies too great a proportion of destructible substance,—unless we may suppose that a share of it exists in the hair in some other state, more favorable to its perpetuity.

Scherer analyzed hair of all the principal varieties, and found that while the quantity of nitrogen is the same in all, the proportion of oxygen and sulphur is greatest in light hair, and least in brown,—the former, however, containing the least carbon and hydrogen, while carbon abounds in brown hair. Black hair comes between light and brown, in regard to the quantity of the above elements, possessing, however, more hydrogen than brown hair. But since Scherer makes no mention of iron, manganese, lime, silex, magnesia, etc., which, one or more, have by other chemists been found in every variety of hair, I do not perceive that his statements are deserving the most implicit confidence.

Professor Dickerson, an eminent English *savant*, although not losing sight of the animal matter which, in greater or smaller proportion, certainly exists in the hair, is inclined to claim for the various *metallic* and *mineral* elements a more prominent share* in its constit-

Ichaboe, was brought to this country and exhibited, in 1854, it being in a state of universal petrifaction, with the exception of the hair, which was apparently in its original state.

* He in fact reverses the order of prominence,—discovering in human hair very appreciable quantities of iron, lead, sulphur, lime and magnesia, besides a portion of animal matter and several gases.

tution than the majority of his compeers and predecessors. For my own part, I consider his views to be rational in proportion to their divergence from those which I have been considering. Admit them, and a theory, consistent and plausible, is possible, accounting not only for the indestructibility of the hair, but (as will presently endeavor to show) for its various colors and shades. Deny them, and (as may be inferred from the next paragraph) even a rational *theory* is impossible, to say nothing of satisfactory demonstration.

Thus, Bichât declares that it is the central or medullary part which gives the hair its color, the peripheral portion being white in all cases; while Cuvier (*Leçons d'Anatomie Comparée*, Leçon XIV.) asserts the direct reverse of this. Bichât imagines the medullary part to be composed of extremely delicate vessels, containing a peculiar fluid which stagnates within their cavities and thus produces the color; declaring further that it is distinguished from the peripheral tube by possessing vital properties. Vauquelin, (as before stated) believes that the color of the hair is derived from a substance of an oily nature; and as the coloring matter is destroyed by acids, conjectures that when hair has suddenly become gray, through mental emotion, the unwonted commotion of the spirits has occasioned the formation, in the system, of an acid capable of instantly neutralizing the coloring matter in the hair. Dr. Bostock sneers at this hypothesis, and offers another, to the effect that this kind of grayness is produced by a "sudden stagnation in the vessels which secrete the coloring matter, while the absorbents continue to act, and remove that which already exists." So that the coloring matter may be said to flow in and out, with almost as much facility as the blood in one's hand. Dunglison has his sneer at both these pundits, remarking that there is "no more real evidence of 'stagnation of vessels' than there is of

the formation of an acid." A writer in the *Encyclopædia Britannica* observes that "the coloring matter of the hair appears to reside in an oily fluid, analogous in its nature to that which is contained in the *rete mucosum* of the skin; and according to its color arises the diversity of black, brown, fair, and red hair, and their several shades. Grayness is induced by a deficiency of this fluid, whether arising from age, sickness, or mental emotion, such as grief, or sudden terror." Some physiologists consider the *horny covering* of the hair as the seat of color, being fortified by the analogy of the hairs or spines of the hedgehog, the pith of which is white, while the horny exterior is colored. But how a sudden fright, or any other mental emotion, could summarily discharge the color of a layer of horny scales, has not been explained by them. Perhaps, with Dr. Bostock, they doubt whether any such incidents have really occurred.* Dr. Draper also declares the color of the hair to be "due to a peculiar colored oil." In the black varieties he says that iron predominates.

So that the idea of a *colored fluid*, imparting color to the hair, is apparently universal among physiological writers. It is very generally thought that the hair is transparent, or at least colorless, at its formation, and that it thus remains until at length it begins to draw into its interstices the coloring fluid which is destined to confer the shade designed by nature.†

* See chapter on "Grayness."

† "There is often," says Dunglison, "an intimate relationship observed between the color of the hair and that of the *rete mucosum*. A fair complexion is accompanied with light hair; a swarthy with dark; and we see the connection still more signally displayed in those animals that are spotted,—the color of the hair being variegated like that of the skin." Had he duly considered this fact (for it is true in the main, though all are acquainted with exceptions), he would have found it a strong argument against the theory which he favors in relation to the color of the hair,—that it resides in a *fluid*; for in

I shall endeavor to show that the various colors and shades of the hair depend solely on the relative proportion of its predominating solid constituents—those which form its permanent structure.

Let us first consider the instance of black or very dark hair. There are various salts of *iron* which produce a dark or black color when they are applied to organic or vitalized substance. Now, should we find that iron—though it is absent from very *light* hair—is always largely present in black and dark brown hair, and that the formation of its various chemical compounds is possible, because of the presence also of the necessary elements, we should perhaps be justified in attaching a degree of significance to these circumstances,—more particularly upon taking into the account the fact that iron is the only inorganic constituent of the hair that is known to be capable of producing a black color.* This view is encouraged by the lately-

the first place, the color in the rete mucosum could proceed from no fluid; and secondly, the idea of different colored fluids (as in the case of spotted dogs) each maintaining its integrity while in juxtaposition with a different one (and all elaborated by the same organs), is absurd.

* Carpenter observes that the coloring matter of the hair “seems related to Hæmatine [or *Hæmatin*, the red coloring matter of the blood]; it is bleached by chlorine; and when it gives a dark hue to the hair it *usually contains a good deal of iron.*” Dr. Dunglison, in a passage which seems to militate against this view, observes as follows: “That the color of the blood is not owing to the peroxide of iron which it contains, is shown by the fact mentioned by Scherer, that he removed the iron by acids, and yet a deep red tincture was formed when alcohol was added to the residuum.” It will be remembered that this chemist does not seem to have found any iron, or other metallic element, in the hair;—elements which, however, do really enter its composition. I do not therefore consider his statement to possess any particular importance; and even though this were otherwise, it does not necessarily affect the theory I have advanced to account for the dark color of the hair. Something more than this statement by Scherer, it may be added, is necessary, if we would convince the scientific world that the presence of iron in the blood has nothing to do with its color.

demonstrated fact that the coloring principle in the hair resides in the "pigment granules" (mentioned in chapter V.), and not in the organized fibres themselves. It also derives support from analogy: since, if it be rendered probable that lighter colors are based upon other metallic or mineral constituents of the hair, it follows that we may all the more readily assume the correctness of the theory accounting for a black color.

In blonde and light brown hair—especially the latter—we find a large proportion of *sulphur*. Now, this mineral, under favorable circumstances, manifests a strong affinity for the elements of *water*, which is present in greater or smaller quantity in every part of the system. Electing first the hydrogen of the water, and pursuing its affinities, it forms hydro-sulphuric acid, which enters into various combinations with other constituents of the hair. Several of these combinations—particularly, one with lead—may produce a brown color, of a shade which may depend on the quantity of the pigments, or the qualifying influence of other coloring elements, as, for instance, a salt of iron, or some compound of magnesia.

Yellow or golden hair may exhibit among its inorganic constituents an excess of lead. The protoxide of lead (termed in commercial phrase "litharge") has a rich yellow color. It is not violently unreasonable to fancy the production, in the laboratory of nature, of a pigment analogous to this substance, capable of imparting a yellow or golden tinge to the hair,—since the materials are furnished to her hand, and the oxidation of a metal is a very simple chemical change. Whether we assume that the lead suffers oxidation before or after it has attained its place in the hair, the required oxygen is not wanting, for this gas is evolved by various chemical processes which may occur in the system,—as, for instance, when water is decomposed by sulphur.

In very light or flaxen hair we find an excess of *magnesia*. Doubtless it is to this constituent that the lightness of such hair should be mainly attributed. This description of the human hair rarely if ever turns gray: it grows gradually darker as we approach the middle of life, and at length returns by degrees to its original shade; so that old age finds us with the flaxen or silver locks of youth.

The origin of the color of red hair, I do not presume to determine with the precision which characterizes the foregoing speculations. In my opinion, it may arise from a variety of causes; but I should say that an abundance of *oxygen* would be found to characterize this kind of hair, or that part of the system more immediately concerned in its production. Thus the oxygen could unite with either lead or iron, or both, in the proportion necessary to form a peroxide, which in either case is red. But the instances in which one only of these metals is present, or in which the color is due to their joint presence, in greater or smaller relative proportion, can be determined only by a careful analysis of each specimen by itself.

The subject of gray hair is reserved for a separate future chapter. Gray is not a normal color of the hair, and indicates a derangement of function, or the approach of age, with its inevitable weaknesses and failures.

CHAPTER X.

IRRATIONAL MODERN TREATMENT OF THE HAIR AND SCALP.

ALTHOUGH it cannot be said that in the way of manipulation and adornment of the hair, the extravagance of former times is equalled in our own, still it may

fairly be a question whether in any previous age the designs of nature, in reference to this part of the human structure, were more sadly hindered, and even her rights more deliberately and stupidly outraged, than they are in the present,—notwithstanding what we complacently style the “progress of the race” in intelligence, and its wonderful modern affluence of common sense.

A knowledge of this painful fact has induced me to devote a chapter to an examination of the practices in question and a demonstration of their disastrous consequences. I shall, perhaps, be compelled to anticipate a portion of the philosophy contained in a later chapter, on “Debilitation of the Cuticle, and the Resulting Affections;” but the facts are so important, and many of them besides are comparatively so fresh, that to reiterate them is rather an act of painstaking benevolence than a work of supererogation.

From what has been said of the customs of our forefathers, relating to the hair, it is at least plain that we come fairly enough by our concern for that part of the system; and it would be strange indeed if this or any future age should regard with indifference so conspicuous and often so beautiful an object,—one capable of so much variety of aspect, so well adapted to the display of fancy, and so constantly engaging the notice not only of the wearer but of the little world in which he moves. Not till human nature shall have been radically changed, and its vanity and even self-respect eliminated, can such a phenomenon occur.

It is painful to reflect that the efforts—often so painstaking and elaborate—of a vast number of persons, bent on enhancing the health and beauty of their hair, are so often attended with results directly the opposite of those which had been hoped for and expected. The *concern* is just enough, but the practices which it occa-

sions are many of them so unphilosophical—so stupid and mischievous, when the right terms are employed—as almost to make one wish that it might be exchanged for perfect and universal indifference. We might then find nature—left quite to herself, and devising her own means to effect her own objects—achieving infinitely more, for the health and becomingness of the hair, than can now be possible, when our officious and ignorant zeal is, of necessity, added to the account; since, in our impatience, we generally have the ill-fortune on the one hand, to frustrate her plans, and discourage her into a chronic indolence, or else, on the other, to spur her into perverse and self-injuring activity, the final effects of which are often truly lamentable. The truth is, that but for man's foolishness at the outset, inducing difficulties which would else have had no existence, he would rarely feel himself called on to assist nature, in respect either to the production of hair or to its maintenance in the highest condition of vigor and beauty. Among the Indians, who almost totally neglect their hair, a thin or weak growth of it is a phenomenon. I do not consider the instance conclusive, since the physical system of savages must necessarily be higher strung than that of tame and civilized people, whose artificial way of life entails a more depressed state of the vital forces: so that every part of the system of a savage may be said to possess a power of rude thrift which arms it against influencees to which the same part in an effeminate system might not be able to present an adequate defence. But were savages, even, to acquire the notion that a due concession to the general sense of becomingness involved a regular, persistent, and violent irritation of the scalp with certain civilized implements, the drenching it with stimulants, the soaking it with grease, the arbitrary diversion of the hairs from their natural direction of growth, and the twisting, hatchelling, scrub-

bing, rasping, scorching, stretching and plastering it down, which cultured mortals so willingly inflict on themselves, perhaps thin, weak, or blanched heads of hair, and even "bald spots" might not then be found so *very* rarely among them ; nor would we look vainly for the ultimate appearance of a few thousand preparations of the "medicine-men," each warranted to remedy every defect of nature, provided the directions were strictly adhered to, and accompanied with certified "statements" of persons a great way off from the reader, and perhaps still further removed from actual existence, or at least from any notion of truth or the true history of their own disorder.

A plant which, for the sake of a speedier growth, has been removed from the open air and an ordinary soil to the hot-house, and kept there long enough to have come fully under the new influences to which it is subjected,—so stimulating for the time, if finally injurious,—may not afterward be suited by the circumstances which were at first exactly adapted to its needs. Re-transplanted, it quickly droops, perhaps dies outright, because it is now too delicate, too long pampered to thrive on its original fare. But had the original soil been gradually but thoroughly and permanently enriched, and the original situation more effectually protected, the plant being retained therein, we should have witnessed the gradual improvement of that plant, in every quality of its kind, and its permanent vigor and hardiness.

An important lesson may be drawn from the above familiar statement. The hair (which may here be called a corporeal plant) thrives best when equably nourished, not over-fed ; when its share of physical vitality is steadily and temperately supplied to it ; when the surface from which it springs is enabled to perform its various functions regularly and with ease ; when, finally,

the variations of temperature to which it is subjected are rarely violent and never extreme. How many of these conditions are commonly fulfilled? and why do the majority exhibit less sense in all that relates to the physical man, than the stupidest gardener in things which pertain to his calling? A boy at play, in a cool atmosphere, with a thin hat or no hat on, does not feel the cold air on his head, for he is warm all over: *cold-proof* from top to toe. Then he enters the warm house, the hottest stratum of air being the highest (the reverse being the case out of door), and presently his feet are cold, but his head is hotter than ever. Heat enervates; it stimulates unduly, and lessens the resisting powers of the surface. Presently, out scampers the boy again; in ten minutes his cap is off, and his over-heated scalp is called upon to resist a blast of very cool air. With the rest of the body's surface, it is perspiring freely; but the scalp lies upon a hard, immobile substance; it works through sympathy; it cannot resist so successfully this sudden reduction of the outside temperature, and is all the more helpless from its late hot-house experience. The rushing air, rapidly evaporating the moisture on the hair and scalp, so quickly reduces the heat of the latter below its natural and necessary temperature, that it receives a shock; the pores close from constriction of the tissues; the boy suddenly feels an unpleasant change and puts on his cap again: but the mischief is done. Scurf or dandruff appears soon afterward; the itching of the scalp provokes constant and very energetic scratching; the tender and delicate integument is further injured by mamma's assiduous brushing and combing; and one of the first results of this state of things is a harshness and dulness of the now imperfectly nourished hair, before so bright and soft. Then comes grease, or a fearful system of shampooing and oiling at the hair-dresser's. The oleaginous applications act mechan-

ically upon the hair, and of course renders it soft. But the grease which at the same time softens and soils the hair, also stops up the outer apertures of the minute pores, so very numerous on the scalp, and thus in a greater or less degree opposes the designs of nature by repressing the fluid which has been directed to that quarter of the system for elimination. The results of this suppression are shown in the chapter entitled "Debilitation of the Cuticle." Often they are sad enough.

Had the mother been better acquainted with physiological laws, more opposed to the use of oils, and less sensitive to the temporary diminution of the customary glossiness or pliability of her child's hair, its natural condition might easily have been restored, and as easily preserved. The passages, in the succeeding chapter, relating to the Management of Children's Hair, afford ample information upon the subject,—information apparently much needed, and invaluable to mothers and all who have the charge of children.

If such violations of nature's laws may be attended with consequences so unfortunate in the case of *children*, in spite of their unimpaired vigor and intense vitality, how much more naturally may we look for such results when those laws are violated by *adults*, whose vital forces are usually so much impaired, and who have for years been pursuing a course which points naturally and almost inevitably to a chronic debilitation of the scalp, and its attendant train of evils. The truth is, there are few persons of mature age who possess a perfectly healthy scalp. The measures usually taken to make it so, produce only a temporary if any good effect; either immediately or eventually they but aggravate the symptoms, and perpetuate the conditions they were fashioned to remove. Thus, for almost any disorder of the scalp or hair, there are a hundred advertised remedies, and as many domestic preparations—the

latter having the advantage of a formula known to all; and in the vast majority of cases the sufferer resorts to some one of these, or to a dozen in swift succession, and is at length exasperated to find the necessity of action in the case fully as urgent as before. Now, if we but examine these myriad preparations—whose virtues are usually rated so highly by at least the proprietor—we shall find that few or none of them are capable of good; very generally they are most mischievous, as well as common and filthy mixtures, with nothing refined or elegant about them but their titles. In many instances their true formulæ, reduced to elementary terms, would not only astonish but disgust a decent person. A reference to the Appendix of this work, where the reader will find revealed the composition of a large number of the more loudly-vaunted modern preparations for the hair, will fully justify the language of the preceding sentence. What! *lard*, *castor oil*, and *Spanish flies* doing their pestilent work on the head of a *lady*? That is generally the plain English of it,—no matter how highly scented the compound, how elegant the wrapper, or how learned and pompous the title. The healthy scalp needs no stimulant; if diseased, by no stimulant can it be restored to health. The healthy hair needs no oil but that which nature gives it; and no other oil can make it healthy, if diseased. It was shown in a former chapter how bounteously the unctuous substance is supplied which is designed by nature for the softening of the hair; and it may here be added that nothing but culpable ignorance, and long-continued violations of the system's integrity, could occasion the need of a resort to artificial means to secure the end contemplated in the formation of that secretion.

The effects of the application of the various preparations hinted at above, may be stated briefly as follows: All animal oils, and all vegetable oils but one or two,

possess more or less of a gummy or glutinous quality; and when the alcohol with which they have been diluted has evaporated, the residuum becomes more and more inspissate, and resolves itself into a deposit or coating which practically acts as a hermetic seal to the apertures of the pores, whence the insensible perspiration can no more escape than though the coating were of caoutchouc. They so soften the hair that it may be (and of course *is*) plastered down in a compact oleaginous mass upon the already oppressed surface, which is thus further injured and rendered less capable of performing its regular functions. As for the various stimulants, they one and all temporarily excite the organs under their influence, but always at the expense of their subsequent energies—the old story, as true as it is old. Once they are stimulated, the necessity soon becomes apparent for a re-application of the spur; and so on till stimulants fail, and the delicate structure on which they have been operating so cruelly is absolutely incapable of further effort, let the inducement be never so powerful.

A word might be said, concerning the use of oils and the reducing the hair to the condition of a solid, on the score of *taste*; and a growing fashion,* opposed to at least the latter idea, abundantly encourages me in uttering that word. In my opinion, *grease* is quite unfit for the toiletts of the cleanly. It is every way injurious. The use of it does not seem refined; and those who employ it have but crude and erroneous notions of true *art*. The vulgar glistening of anointed hair is as offensive to a true taste as is the characterless and therefore insipid custom of plastering it down firmly upon the head, so much in vogue in every grade of society. It is time that cultivated and refined persons were resolved to

leave these barbarous, ignorant, and injurious traits to the more appropriate keeping of their true originators, the Laplanders and the aborigines of New Zealand.

All decent nurses seem assiduous enough in their attentions to the scalp of an infant ere the *hair* has made its appearance—frequently for a good season afterward; washing it carefully and repeatedly, and drying it with the utmost tenderness of touch. Now, I would ask, when is that era of growth reached which makes the contrary course advisable, or even admissible? Cleanliness of the scalp is really more necessary than ever when the hair is grown thick; for the delicate integument which supports it, at the expense of so much vitality, and has so much other important work to do, cannot now be oppressed and burdened with a collection of impurities which not only obstruct the pores, but frequently irritate and inflame the surface, and thus disturb that harmony of forces which it is apparent is so essential in this part of the system. Thick hair also precludes the advantages derived from a free circulation of air over the surface, thus abridging the chances of cleanliness by *natural* means, and rendering a resort to artificial ones all the more imperative.

Were all this generally known, it is very probable that a vast number of young children, whose heads are now either partially or totally neglected, would feel the practical benefits of the information, since parents do not commonly despise that which is clearly for the interest and lasting benefit of their offspring. Many, who seem dimly conscious that total neglect of the scalp is unphilosophic, endeavor to compromise the matter by the frequent use of a stiff brush, one selected for its *exceeding* stiffness, that its bristles may penetrate the hair, however thick, and come at the scalp, which they of course greatly excite and irritate. This irritation and excitement is thought to be of incalculable benefit;

whereas, in the majority of cases, it is of inealculable injury. What the scalp needs is not *excitement*, but *cleanliness*. The outer layer of the sealp, or, in other words, the epidermis, especially in childhood, is so delicate and tender that but little force is requisite in order to separate it from the derma which produces it. Or if not separated from its support by the harshness of combs and brushes, its structure is injured, and the exfoliation of minute particles from its surface, conducted by nature to the great advantage of the epidermis, when the latter is healthy, becomes, when thus accelerated, a morbid process not only exhausting but sometimes ruinous, as the partieles increase in size and number, and with the thickened secretion from the sebaeous and sudoriparous glands, form a tenacious seurf, which is never harmless, and often encourages the approach of some ravaging disease, as, for instance, some form of eczema, or porrigo.

The above, though referring more particularly to the instance of young children, is applicable also to that of adults. Indeed, real neglect of the sealp, qualified with this mock amends, is the fault of most, among all classes and with both sexes. There are very many who do not thoroughly cleanse the scalp once in a year; doubtless there are many who have *never* done so. And how miserably inefficient, in the case of others, is the infrequent "shampooing" operation of the hairdresser, with his exacerbating compound, a hundred degrees too violent, and his cataract of cold water at the end! Nothing could have been devised more likely to insure a speedy return of the customer than this aggravating *finale*. Such a tremendous shock to that feeble surface is almost certain to diminish its energies and thus promote the formation of seurf and dandruff. And the cheap oleaginous preparation with which he subsequently drenches the scalp and lubrieates the hair, is

perhaps really a greater evil than the one which had occasioned the operation of shampooing. Outraged nature is not to be appeased with these spasmodic profers of a mean justice, in which nothing is innocent but the intention ; the long intervals between them are too full of chronic insult not to be felt far more than the apology.

Many have fancied that washing the scalp is injurious, from the fact that the hair is drier afterward than before. It would be odd indeed were it otherwise. The true questions are—whether a temporary dryness of the hair is a misfortune? whether it is a condition less desirable than foulness of the scalp? whether, were the cleansing operation judiciously performed, and often, the result complained of would wear the same complexion? and, finally, whether the unhealthy condition of the hair and scalp is not the circumstance at fault? for certainly the wish to be *clean* is a pure instinct, and to gratify it is both a privilege and a duty. “Cleanliness is next to godliness,” and simple nature is the friend of both. Whatever is done in the name of either obliges nature; how much to our shame if it surprises and embarrasses her too! For then it speaks very eloquently of former neglect, of former idle and sinful habits, so long continued that nature has ceased to expect a change, and has done her best to accommodate her processes to a state of things that seems inevitable.

CHAPTER XI.

GENERAL DIRECTIONS FOR THE MANAGEMENT OF THE HAIR.

THE directions following refer exclusively to the treatment of the hair and its supporting surface in their

ordinary or comparatively healthy state: the subject of their various diseases covering by far too wide a field as a glance at succeeding chapters would demonstrate) to be touched upon in this place. And though these hints must necessarily be general, it will be found that few persons are so peculiarly constituted as to need specific directions, on the subject under consideration. There is but one end to be attained, and but a small range of means is really available to that end.

Children's Hair.

Though medical writers, in the part of their several works that relates to the Nursery, are explicit enough with regard to the general physical management of children, it is remarkable that so little is said in regard to the course of treatment proper for the hair and scalp. Now this reticence cannot be the result of indifference to the state of the hair, nor to the operation of physiological laws with which every medical student is familiar. I can assign no more satisfactory reason for the fact above stated than this: the popular impression that the scalp is exempt from the operation of those laws of cleanliness which everybody admits affect all the rest of the body's surface, is entertained also by the learned; or else the latter believe that they have but a choice of evils,—the *least* being, to let the scalp alone, while the greater would be, to keep that surface thoroughly clean, at the expense of constant trouble with the *hair*. So that the old bad custom, of harsh combing and brushing, and the copious use of oil and grease, still constitute the practice of mothers and nurses, with the permission and implied approbation of the family physician. How many of the cases of serious disease of the scalp, in infancy and childhood, are directly or indirectly the result of this objectionable treatment, it would be impossible to decide; but from

the marvellous delicacy of the integuments at that tender age, and the susceptibility of the constitution, ere its habits have become fixed and its processes part of a settled routine, we cannot but infer that diseases of the scalp must often have been produced in this manner, and that in a vast number of other instances the disorder must have been terribly aggravated by the same malign influences. Does any sensible person, once fully satisfied of the infinite delicacy of the cuticle on the head of a child, imagine that so tender a surface may with impunity be daily raked and harrowed with fine-toothed combs, and stiff-bristled brushes, and also inflamed and irritated with violent frictions and stimulating applications? No; every touch, affecting so delicate a texture, should be soft and soothing; every application as mild as possible.

From the time when the hair first appears, the scalp should be kept clean with frequent baths composed of an infusion of *Murillo Bark*. The infusion need not be strong, and may be made either with cold or hot water. If the bark cannot be obtained, a bath may be substituted composed of equal quantities of the *Aromatic Spirits of Ammonia*, and 80 per cent. alcohol, diluted largely with soft water,—if possible, pure rain-water, which has been once boiled;* and every particle of the solution should afterward be rinsed from the surface and the hair, which should then be thoroughly and carefully dried with cloths, and protected for a while from cold air. Brushing the hair gently, in the direction in which it naturally lies, will force from the free ends of the

* The object of boiling the water is to destroy the animalcula which are often found in it. Though it is not certain that these creatures are capable of mischief, it may be that the little pest, called the "Hair-eater," is now and then conveyed to the head in the water with which it is bathed, and it is well to guard against such a contingency. The Hair-eater is described in another part of this work.

hairs a portion of the sebaceous secretion with which their central parts are filled, and the soft bristles of the brush will diffuse it equally, in quantities sufficient for every needful purpose, whether of health or artistic effect. In cases in which, from delicate health or other constitutional cause, this sebaceous substance seems to be deficient in quantity, and the hair in consequence is unmanageably stiff, a small quantity of the Tincture of Bayberries may be applied. This will render the hair soft, glossy, and flexible. I recommend this tinetur with confidence, having used it for many years. It is volatile and evanescent, but innocent while it remains, since the vegetable oil which is its base, unlike other oils, animal and vegetable, possesses no gummy or glutinous ingredient, to irritate the scalp and permanently obstrnct its pores. Whenever, then, the necessity of a softening application is apparent, the tincture of bayberries may be used, and should be preferred to any of the compounds before the public, however highly they may be recommended.

Let no mother or nurse commit the senseless and tasteless error of endeavoring to plaster down the hair of a child firmly to the scalp, and of resorting to some fatty unguent in order to accomplish this foolish end. Of questionable taste, even in grown people, in the case of children the practice is abominable. It is injurious, martistic, and absurd.* Every thing pertaining to a child should be as free and unconventional as its own

* It may further be observed, that as nature has in every case given the hair that shade of color which harmonizes best with the complexion and most perfectly suits the expression and cast of countenance, it is injudicious to employ any means which deepens or otherwise alters the original shade. But this effect is invariably produced by oleaginous applications—which therefore are still further objectionable, in this exclusively artistic sense. A vulgar notion, very widely spread, in favor of *dark* hair, irrespective of the wearer, is probably largely responsible for the excessive use of oils.

nature. Stiffness and primness are here peculiarly odious, to a refined taste. *Utility* cannot be pleaded in favor of these inartistic designs, till the hair is grown so long that it falls over the eyes; *then* the “abhorred shears”—so fatal to that fresh and innocent grace which flowing locks impart to a childish face—may, perhaps, in some cases, be pardoned their rude offence: though, for my own part, I have often thought a narrow fillet a sufficient remedy for the inconvenience mentioned, which, perhaps, is often greater to the sympathizing beholder than to the child herself. It must be observed, however, that when the hair has attained the length of several inches, a slight trimming may be useful, for the reason that otherwise the escape of the oily substance contained in the hair is sometimes prevented by the closing of the ends, and thus it becomes more or less dry and harsh. Ultimately, were the ends to remain untouched, the secretion of the oil might cease; for nature is too economical to be forever providing for contingencies that never occur. Or, if this view be deemed too fanciful, it is obvious to reflect that a secretion of any specified transient product in the system could not continue long after that product had ceased to find exit, and the channels provided for its transmission were become filled with it to repletion. The habit of production thus broken, the chances—after a given period—would be against its final resumption. So that a very slight clipping, once in four or six weeks, is desirable in theory, while in practice it is found to be of decided benefit.* Where clipping of the hair has been

* It may be observed, on this point, that the necessity of clipping the hair may be obviated by the process of briskly brushing the *ends* of the hair, a handful at a time being raised for the purpose, and repeating the operation at intervals. This method should be adopted where it is desired to keep the hair as long as possible. The stroke is made in a direction parallel to that of the hairs, and should include an inch or two of their length.

too long deferred, the ill results may frequently be discerned in the dry and faded appearance of the ends, which are often also split to a good distance up the shaft. The operation of cutting at once restores the freshness and beauty which the hair had formerly possessed.

In cases in which the surface possesses less activity than would be consistent with a condition of perfect health, a slight accumulation of scurf may at times be discovered, requiring means more than usually energetic for its removal. The accumulation, and the tendency to it, may speedily be removed by the daily use of a mixture, in equal proportions, of 80 per cent. alcohol and aromatic spirits of ammonia,* with a quantity of soft water. The use of fixed alkalies, such as borax, salts of tartar, soda, etc., should be avoided, since their effect is to diminish the natural elasticity and flexibility of the hair.

Too great care can hardly be lavished on the hair of children, since it is true that the foundation of many

* This is the bath before mentioned. The ingredients can be had at any drug-store.—The Aromatic Spirits of Ammonia is a very useful compound. Thus, no more desirable *bath* could be devised, for daily ablution,—particularly in warm weather,—than one composed of this fluid and water combined (whatever the quantity may be) in the proportion of a wineglassful of the former to a basinful of the latter. It renders the skin soft and fresh, and, unlike soap, leaves no alkaline or other deposit. For removing grease or stains from the hands it is also admirable. To be effectual, the quantity of ammonia should in this case be doubled. In the proportion first mentioned, it constitutes an excellent shampooing fluid, one of the best that could be devised. Soft water, to which has been added one-half of this proportion of ammonia, constitutes an elegant bath for children. If used for this purpose, care should be taken to keep it out of the eyes, which it causes to smart. With cold water, it is very useful in cases of vertigo, or headache, accompanied with a hot head. Its use in faintness, etc., is too well known to need particular mention. The same may be observed of its detergent qualities, where it is desired to remove grease-spots, etc., from any surface.

diseases which destroy it is laid during the period of childhood. A fine, healthy growth of hair, upon the head of a child, is not so common a thing as might be supposed. Protracted observation would, in at least half the cases under notice, discover a predisposition to some destructive disease of the scalp, if not its actual presence in at least the incipient stages. This consideration alone, were every other forgotten, should impress very strongly on the minds of those having the charge of children the necessity of following the advice given in this chapter. Scarcely any other care will be so gratefully remembered in after life, as that bestowed on the young in the shape of attention to the condition of the hair. The hair, when in fine order, is so rich an ornament that the wearer may justly contemplate it with pride. And how rare is a splendid head of hair! How very common is baldness, the other extreme! Hardly any other defect is so keenly felt; no art can perfectly hide it, and art is generally impotent to restore the hair which has been so unfortunately lost.*

The Hair of Adults.

I have little to add, to the foregoing, as peculiarly applicable to grown people, since much that has been said of children's hair applies fully as well to that of adults. From youth to age, there is no period after which assiduous attention to cleanliness of the scalp

* As *long eyelashes* are justly considered an element of beauty, I will afford a hint upon this point. The mode adopted by the beauties of the East, of increasing the length and strength of their eyelashes, is simply to clip the ends slightly with the scissors, about once in a month. Mothers perform the operation on their children, both male and female, when they are mere infants,—seizing the opportunity while they are asleep. The practice never fails of the desired result. I recommend it to my fair readers, as a safe and innocent means of enhancing the charms which many of them, doubtless, already possess.

may be dispensed with. At no time of life does that part of the body's surface lose its tenderness and susceptibility, or its peculiar liability to functional or strnctural disorder. Indeed, modern habits of life are commonly so unfavorable to the healthful performance of the bodily functions, that, when those habits have been long indulged, a chronic disorder of some part of the system cannot be thought a strange occurrence ; and this logic is amply justified by well-known facts. As has been remarked in another place, a diminntion of vitality in the system may be expected to affect more particularly some portion of the structure far removed from the vital centres, yet depending, for its integrity of function, on an abundant and unfailing supply of vital force. This precarious tenure upon the elements of vigorous functional life, is held particularly by the scalp, which, to add to the trouble, is generally (as the reader is aware) overworked and otherwise abused. In view of these considerations, it is plain that attention to the scalp, on the part of grown persons, can hardly be amiss, and may often be abundantly rewarded.

It may be observed, at the outset, that various conditions of the hair and scalp, referring often to simple mechanical obstruction of the pores, or to the immediate consequences of over-stimulation or other ill-treatment, sometimes indicate more serious difficulties, as will be apparent from a perusal of the chapter next but one, on the results of a debilitation of the cuticle. When this is the case, the mere cleansing of the snrface does not commonly remove the symptoms, which then require a treatment especially adapted to them. The conditions allnded to are, briefly : irritation, manifested by pruritus, or itching of the scalp, more or less general and severe ; a moist exudation from the surface ; dandruff' and scurfy accumulations ; a faded and lifeless appearance of the hair ; and the falling of the hair,

either general or local. Sometimes the latter symptom refers to the advances of age, or to premature exhaustion; when such is the case, little or no help may be expected from art. But most commonly, in the young, it is occasioned by disease or neglect; and then we have but to remove the cause, in order to effect a prompt cure.

There are many who, so far as the cleansing the scalp is concerned, merely now and then go to a hairdresser and have the head "shampooed." Aside from the fact that the method of washing the scalp employed by the hairdresser is every way objectionable (for reasons which have been already mentioned), it may be asked why one who would never think of employing another to perform for him those purifying operations which affect the general surface, should make an exception in the case of the head? The other obvious question, why a cleanly person should make the head wait for ablution a dozen or a hundred times longer than the body, is still less susceptible of a satisfactory answer. For women, an excuse for this negligence lies in the fact that their hair is long and unmanageable; and, besides, with them the accumulation of impurities on the scalp proceeds more slowly than with the other sex, and thus the occasion for purification of that part does not so frequently arise. But what excuse have men?

And now a word or two on another point. It behooves those who *will* use "pomades," "lotions," and other preparations for the hair, to see that the ingredients of those compounds are not capable of lasting injury, not only to the part to which they are applied, but to the constitution. Many of them contain sulphur and acetate or "sugar" of lead. These substances, being absorbed by the tissues, and acting violently upon the nerves, have not infrequently occasioned *paralysis*, now of the optic nerve, again of the auricular nerves,

and sometimes even of the whole nervous system. The compounds which contain these dangerous ingredients are usually designed to change or restore the *color* of the hair, an effect which they accomplish by *staining* the outer portions of the hairs, and in no other way. The hair which is produced subsequently to the dyeing process is always of the natural and objectionable shade, and thus the process must be constantly repeated, at whatever cost of time and trouble; and these expenditures are usually so great as to discourage all but those senseless persons who are most firmly set in their way. However carefully and "successfully" this dyeing operation be performed, it is *always* ridiculous, since it deceives no one, and makes many hideous who might at least have remained *passably* presentable, had they possessed sufficient sense and self-respect to have offered themselves for just what they were worth.*

After what has been said of the structure and mode of formation of the hair, and also of the exceeding delicacy of the producing surface, it would seem an almost superfluous favor to remind ladies that twisting or binding the hair firmly, or inducing a protracted tension in any portion of it—particularly next the head—must necessarily be an injurious practice. An obvious result

* I would invite such of my readers as are inclined to the use of dyes to look around them and observe how constantly certain shades of hair are associated with corresponding temperaments and casts of complexion. They will perceive that fair hair is commonly associated with the sanguineous and lymphatic temperaments, with a fine white skin, blue eyes, and an expression noticeably soft and mild. Very dark or black hair, on the contrary, usually accompanies a bilious habit of body, a nervous temperament, a strong and muscular organization, a dark and yellowish skin, lively dark or black eyes, and a bold, fearless air. Red hair is associated with a peculiar constitution, approaching the fair type, the skin being transparent, fresh and clear, and so delicate that slight exposure to the sun produces the spots of discoloration termed freckles, while the eyes are commonly blue and soft. Dye hair of this latter variety *black*, and behold the incongruity.

of an upward strain long continued and constantly felt by the roots of the hair, would be the loosening of their hold upon the tract whence the sustenance of the hair is drawn, and a consequent diminntion of the quantity of nourishment to which it had before been accustomed. Besides, a persistent mechanical pressure on the shaft of a hair, by obstructing the flow of the oleaginous fluid designed to soften it, tends to dry those portions which are beyond the ligature, and may thus occasion a noticeable variety of shade and texture, sadly interfering with the effect of the toilet. Moreover, hairs are often broken off by so great pressure, the strain coming unequally upon them, or if not actually parted, they are bruised and weakened.

It is proper, in this connection, to touch upon the practice of curling the hair with heated instruments. As it would be presumptuous in me to offer hints, to ladies, on the *aesthetic* features of this custom, I can only frankly confess that to me scarcely any other practice is so decidedly in ill taste. Curls are rarely or never becoming to such as are denied them by the ordinary economy of nature; and the endeavor to frustrate the designs of so judicious a *modiste*, at least by so arbitrary a course as the employment of *curling-irons*, must always, to me, be a piece of questionable sense. I would add, with more confidence, that the substance of the hair, so enduring and almost immortal under ordinary

ous result! The harmony which nature had decreed is at once broken, and none but the dull and stupid beholder can fail to feel the shock given to his sense of fitness, even though he may not at once discover what is at fault.

Rather than enlarge further on this topic, I will end by referring the reader to the Appendix, first division, where he will find the composition and effects of the various preparations used in dyeing the hair fully exposed. A study of those pregnant facts will, I fancy, materially fortify the position taken in this note and the chapter to which it belongs.

circumstances, is readily affected by artificial heat, and is often seriously injured by even the degree of heat necessary in the process of curling; while a not much higher temperature suffices to completely decompose it. (See Note at the end of this chapter.)

If we are willing to believe that the mode of arranging the hair which most nearly secounds the plan of nature must usually be the most judicious one, we shall see that even in the method of *parting* the hair, there is a narrower latitude of choice than the various customs in vogue would seem to imply.

Owing to the direction given the hairs on their exit from the epidermis,* it is plain that the only natural parting—at least for ladies—is on a line running straight from the centre of the peak of the forehead to the centre of the crown. The exceptions to this obvious arrangement of the hair are very few. Among the number, are those cases of eccentric perversion, popularly termed “eowlicks.” These, of course, need humoring; and it is probable that the natural expression of the countenance is thereby conserved, and would be injured by an attempt to reduce the obstinate lock to subjection. The difficulty always experienced, in the endeavor to effect this object, sufficiently fortifies the views here expressed. There is one style of arranging the hair which can certainly find no justification in any supposed design of nature; this directs a wide lock straight back from the forehead to the crown, while the hair on either side is suffered to fall away in the ordinary manner. The ill effect of this style would suffice to condemn it, setting aside any argument based on the consideration above mentioned. Even the frightful mode, once so general, of combing *all* the hair straight back, is preferable to this, looking on the question merely as a matter of taste.

* See a previous chapter.

It cannot be doubted that the growth of the hair is more or less retarded by a style of arrangement that forces every strand to bend at a short angle. Besides, the flexion occurs so close to the surface that a general contortion of the integument is inevitable: for each hair is thus made a *lever*, which, being inserted at an angle, is then raised till it has passed the perpendicular, and is bent as far on the other side, the flesh yielding or resisting according to its state, but always more or less vexed so long as the unnatural disposition of the hairs is continued. As for the hair on the back of the head, it is so hardy as to withstand almost any amount of ill usage; but, it may be observed, that the natural inclination of the hair favors its being gathered up in a mass, toward the base of the head, in the manner of the ancient Greek women, as represented in statuary. The hair of man can be thrown either to the left or right, since it is only upon male heads of a peculiar shape that it naturally parts in the middle. It will usually be found to part best on the left side; but there is no imperative rule on this point, since the direction of the hair is rather straight forward from the crown, than decidedly inclined to one side.

A word or two, in conclusion, on a point commonly not well understood. There are many who fancy that it is necessary to comb the hair of children back from the forehead, in order to prevent the encroachments of the hair, which otherwise might quite overgrow the seat of intellect, and thus reduce the unhappy subject to the (capillary) condition of a gorilla. To say nothing particular of the absurd mania for a "large forehead" (certainly not an element of beauty in woman, and very rarely in man), it is absolutely true that comb and brush, and even depilatories, have *no effect whatever*, of the kind imagined, and never can prevent the growth of a single hair. The falling of the hair over any given

tract of the surface, has no power to educe new hairs from that region. All the hairs which nature had assigned to that or any other portion of the integument have made their appearance, long before the period at which these operations are commonly resorted to. A glance at the mode of production of the hair, as described in a former chapter of this work, would suffice to convince any reasonable person that as the hair-follicles are a part of the original structure of the skin, and not an after-thought, hairs cannot be produced in a part not intended for them, and are never long repressed where nature has decreed that they shall appear.

Many persons have resorted to the use of *depilatories*, in order to remove hair from tracts on which its presence has not been desired. These compounds, as a reference to the Appendix of this work will prove, are usually composed of various caustic ingredients, the actual effect of which is to burn or eat off the hair down to the level of the skin, or perhaps a little lower; but they do not destroy the roots of the hair, unless indeed the compound have been so unusually powerful as to have also burned the skin, and partially consumed the tissues which have come under its destructive action. In this latter case, it is probable that an ugly scar will be left as a monument of the egregious folly of the experimenter. If persons would be truly wise, in these matters, they must be less impertinent to nature. It is often more dangerous to commit this offence than to affront a personal friend. Nature is a better friend to us than we think. The general formula given her, she takes us, one by one, and completes us, each as a distinct subject of her skill, with the most faithful and artistic attention to harmony and truth of effect; and we ought to remember this gratefully, and respect her work.

NOTE.

It seems proper to append a few remarks on the philosophy of *curling* hair, and the phenomena relating thereto. Although it is generally supposed that the hair-shaft is perfectly cylindrical,—that is, that the outline of a section, were the strand cut across, would be a true circle,—this is really the case but rarely. The section is more or less oval, and in very curly hair is considerably flattened. The *form of the shaft* thus seems intimately related to the condition of the hair in respect to its straightness or curliness. Perhaps we may find in this circumstance a sufficient cause for the ill-success of many persons who have striven to modify the natural state of the hair. Upon the removal of the mechanical constraint or constriction, the obstinate strands return to their original condition ; and thus the effort to make straight hair curly, or curly hair straight, results in a total failure.

But, while it seems certain that we have here a general cause of the variations in question, it remains to account for the changes which one's hair may exhibit in the course of a lifetime. All are familiar with the fact that the hair of the head, though originally prone to curl, may in time seem to have quite lost the propensity : and there are instances of an opposite character, perhaps still more remarkable. It were hardly philosophical to suppose that these changes are in all cases produced by a change in the form of the hair-shaft, though this modification cannot be assumed to be impossible. Obstruction of the hair-follicle, or some change in the producing organ, may occasion an actual change in the form of the strand ; but I do not think it necessary to depend solely on this method of resolving the problem. Actual experiment, indeed, would go far toward a satisfactory solution ; but I have never heard that examinations of the hair-shaft have been instituted with the view of discovering whether age or disease is capable of affecting its outlines.

I am of the opinion that the state of the bodily health has much to do with these phenomena,—or perhaps I may say, the state of the cutaneous circulation, and the consequent amount of vitality imparted to the hair. Thus, hair which during youth was always curly, but in mature life is found much less so,—in some parts of the head perhaps quite straight,—has not necessarily changed physically in respect to the form of the strands, but has simply *deteriorated*, or become enfeebled through a lack of vitality, and is no longer able (so to speak) to *assert its own nature*. This will seem a probable theory when we recall to mind the large number of such cases in which the curl has only deserted the hair on the *top* of the head (the region first to grow weak), still maintaining itself around and behind the ears, where the hair is naturally more vigorous. That the curl may temporarily return to the parts it has left, is a fact very commonly known. The phenomenon is observed after shampooing

or washing the head. After fevers in which the hair has fallen out and been replaced with new, the young and comparatively vigorous hair is apt, for a time at least, to be curly. In the case of ladies' hair, which has thus temporarily changed its character, we may fancy that its newly-acquired propensity to curl might in many instances be conserved by keeping it short, and permitting it a comparative freedom. But when, as its length increases, it is finally brought under the customary somewhat rigorous subjection, we may conclude that its own weight, the assiduous oiling and brushing which it receives, and the firmness of the masses or knots in which it is usually dressed, are more or less responsible for the decline of its power to curl.

CHAPTER XII.

THERAPEUTICS.

General Observations.

It would necessitate a very large addition to the subject-matter of this work, were I to enter into the minutiae of every separate mode of treatment, and thus endeavor to prepare the reader at all points in relation to the prospective management of all possible cases of those diseases which are described in the ensuing pages. Though this is, at present, quite out of the question, I may, at some future time, have the leisure to prepare a work expressly designed to cover the ground neglected in this. I am aware that cases may occur which will require that intelligent supervision which only a large experience can qualify the practitioner to exercise. But I may observe that the treatment of a large proportion of skin-disorders involves merely the application of a (comparatively) few general principles,—such as may be here expressed consistently with the plan of the present treatise.

A reverential study of the various dermatological

works whieh are in common use, would naturally impress the student with a sense of the obstinancy of most cutaneous diseases, and the exhaustlessly varied nature of the remedies and modes of treatment required. He would perhaps also be sadly bewildered with the astonishing multiplicity of these disorders, with their variations and numerous sub-titles. Much of this variety, however, is the result of an unnecessary elaboration by the professed nosologists, who usually distinguish themselves far more signally in the multiplication of titles and the concocting of new formulæ, than in the successful treatment of the maladies so ingeniously constructed out of familiar materials. Not to do injustice to these industrious gentlemen, I shall transcribe a number of formulæ, whieh have been considered valuable, and are doubtless really serviceable in particular cases.

I do not attaeh so great importance to the *constitutional* part of the treatment of cutaneous diseases as do the most of my collaborateurs, but would by no means negleet it,—since, in many instances, particularly those which are accompanied with debility and evident loss of tone, or with manifest constitutional disease, the constitutional must accompany the topical treatment, if we would insure success. While cases of this description are certainly far from being rare, it is still true that there are many in whieh we fail to discover any constitutional malady, or any symptom pointing imperatively to the exhibition of internal remedies. On this point my views will further transpire in the course of the observations whieh belong to the different subdivisions of the matter subjoined. In this place I will merely venture upon a few remarks, more or less generally applicable, whieh seem appropriate to the place I have selected for them.

There is a class of cutaneous affections which I almost wholly neglect, in this work, having barely alluded to

them in various passages of the descriptions: I refer to those disorders which are the result of syphilitic taint. These frequently resemble the more legitimate forms of cutaneous disease, and are often obstinate enough to test the skill of the most expert; but their treatment belongs to another branch of practice, is more essentially constitutional, and therefore has not come within my province. I have shown in several of my descriptions, how these forms may be discriminated.

It is almost unnecessary to comment on the important modifications of cutaneous affections produced by a cachectic state of the system, or to caution the practitioner against too sanguine hopes of a speedy cure, in cases where this state is manifest. Even those simple disorders which ordinarily almost "cure themselves," are often aggravated into seriously obstinate maladies, by the vicious propensities of the system, which are characteristic of cachexia. It obviously should be a prime consideration, in these instances, to alleviate the constitutional symptoms, and increase the stock of vital force requisite to the prompt control of the external disease. Serofulous taint, or hereditary weakness of any description, also interferes with the success of tested remedial agents, and may even utterly frustrate the hopes of the most skilful physician. This I have illustrated in the latter part of the chapter on Acne. No general directions, it is plain, could be of use in the treatment of cases thus modified. Each is a problem of itself: a peculiar mystery, and perpetual exceptional study.

Much has at times been said on the subjects of careful *diet*, and *cleanliness*, in reference to cutaneous disease, both as remedial agents and as preventives. For their own sakes, and as general hygienic measures, they can hardly be too highly estimated; the former, in particular, bears directly on almost every known disorder of the human frame. It may seem strange, that,

so far as concerns diseases of the cutaneous surface, I should not lay superior stress upon the advantages of cleanliness. I must confess that observation and study incline me to assign the first place to judicious diet. Both in England and in America, the majority of cutaneous diseases seem to be more partial to the comparatively cleanly than to the dirty and neglectful. Diseases of the scalp I find no exception to the general rule. This, too, in spite of what I believe to be the case, viz.: that, but for their cleanly habits, the former class would suffer by far more frequently from maladies of the cutaneous surface; and that the latter, so commonly used to active employment, maintain by constant exercise, a vigorous and healthful capillary circulation, also good digestion and assimilation, and thus secure apparent healthfulness of the skin in spite of accumulations on its outer surface, with their necessary consequences. The cleanliness of a large proportion of that "better" class is often a mere sham,—an appearance, with no adequate correspondence in reality. More is said on this point in the chapter on Debilitation of the Cuticle, and in other places. But, dispose of this point as we may, a bad system of *diet* is really at the bottom of a large proportion of the diseases in question. Over-feeding, lack of variety in food, a persistence in the use of articles of an injurious tendency, late suppers, a crowding together of the times for the daily meals,—these various unfavorable circumstances, more especially when taken in conjunction with that feverish activity which characterizes the American mind and militates against the processes of digestion and assimilation, and also with the sedentary habits of many, and the prosecution of the daily work of large numbers in a confined atmosphere, may well serve to account for many cases of disorder, not only of the integuments, but of the system in general, and for the languor and

listlessness under which so many constantly labor who rarely consider themselves ill enough to need the advice of a physician.

When it can be satisfactorily ascertained that causes of this nature have operated in the production of a cutaneous malady, it is obvious that a reformation of the habits must contribute powerfully to the elements of a speedy cure.

Due weight having thus been given the hygienic part of the treatment (for formulæ, see treatment of the various diseases, appended to the several descriptions), the elementary local management of the case, according to the regular system of treatment, usually includes, first of all, a removal of the incrustations, scurf, or any other agglomeration of extraneous matter which may cover the diseased spot or spots. Though I do not find it often necessary to postpone the use of my remedies till this result be accomplished, I deem it best to qualify the reader for either mode of practice, and will therefore give a varied list of the best preparations that have been employed as emollients and detergents. Some of them are useful in connection with my own system.

In the attainment of the end above mentioned, various lotions, washes, baths, cataplasms, etc., are in use, the selection depending on the nature of the case. The use of soaps is very rarely judicious, since they are of an irritant nature, and therefore tend to aggravate the disorder. Tepid and warm baths are often useful in these preliminary offices, but in most cases attended with discharge, of either serous or purulent matter, they produce unfavorable effects, if persisted in. Vapor baths are sometimes beneficial in chronic cases in which there is much induration of the overlying substance, and a necessity for stimulation of the surface.

The following lotions* have been used with good effect in cleansing the surface of the affected parts:—

Stimulating Alkaline Lotions.

B. Liquoris Ammoniae.....	fl ʒj.
Glycerinæ.....	fl ʒvj.
Spiritus Lavandulæ	fl 3ij.
Aquæ destillatæ.....	fl ʒvj. Misce.
B. Liquoris Ammoniae Carbonatis.....	fl ʒx.
Glycerinæ.....	fl ʒij. Misce.
B. Sodaæ Carbonatis.....	gr. xx.
Spiritus Rosmarini.....	fl ʒj.
Aquæ Rosæ.....	fl ʒvij. Misce.

"These lotions are adapted for all eruptive diseases in which the external application of alkalies is indicated; when their chronic stage is attended with atony [want of tone] of the cutaneous surface."

Sedative Alkaline Lotions.

B. Sodaæ Sub-boratis.....	fl 3ij.
Aquæ Florum Sambuci	fl ʒxj.
Aquæ Lauro-Cerasi	fl ʒvj. Misce.
B. Sodaæ Bicarbonatis.....	gr. xxx.
Aquæ Florum Aurantii.....	fl ʒxi.
Succi Conii.....	fl ʒj. Misce.

"Chiefly useful in eruptive diseases of a dry nature which are attended with much itching."

Glycerine Wash.

B. Glycerinæ.....	fl ʒij.
Misturae Amygdalæ.....	fl ʒvj.
Aquæ Rosæ.....	fl ʒvij. Misce.

Astringent Lotions.

B. Tincturæ Acetatis Zinci.....	fl 3iv.
Aquæ Rosæ.....	fl ʒviiss. Misce.

* I find the greater number of these formulæ given by Dr. Neligan. ("Diseases of the Skin," third Am. ed., p. 315, *et seq.*)

R. Acidi Tannici.....	gr. xl.
Aceti Gallici.....	fl ʒss.
Aquæ destillatæ	fl ʒviiss. Misce.
R. Creasoti.....	m. viij.
Tincturæ Krameriæ.....	fl 3ij.
Acidi Hydrocyanici.....	m. viij.
Aquæ destillatæ	fl ʒiv. Misce.

"In using this lotion, the bottle in which it is contained should be well shaken before it is applied to the surface."

Sulphurous Lotion.

R. Soda Hypo-Sulphitis.....	ʒ ss.
Potassii Sulphureti.....	3 j.
Aquæ destillatæ.....	fl ʒxiss.
Aquæ Lauro-Cerasi.....	fl ʒss. Misce.

Stimulant Wash.

R. Tincturæ Nucis Vomicæ	fl ʒss.
Essentiaæ Camphoræ }āā fl 3ij.
Essentiaæ Carui }	
Aquæ destillatæ	fl ʒvij. Misce.

"This last wash is sometimes a useful application in the chronic stages of lichen simplex, when the disease is very obstinate; of prurigo, and in inveterate psoriasis, provided there is no tendency to local inflammatory action."

Several other lotions and washes will be mentioned when I come to the more particular treatment of specified diseases. The foregoing are, some of them, employed both in softening the crusts and in the subsequent treatment of the eruption.

When the incrustations are greatly hardened, cataplasms are frequently used, composed of linseed meal and boiling water, and smeared with fresh lard or olive oil. Where much inflammation or irritation exists, the poultice is better composed of white bread thoroughly steeped in hot water, then squeezed dry, and moistened with some cooling wash.

The crusts, or other agglomeration, having been re-

moved, the local inflammation is sometimes subdued by the continued use of the lotion employed for removing the incrustations, or by the application of some weak cooling wash, generally of an alkaline nature; or it is managed simultaneously with the curative part of the treatment by the incorporation of some cooling element into the ointment or other preparation which may be employed to remove the malady. A drachm of the solution of subacetate of lead, with twelve fluid-ounces of rose or elder-flower water, constitutes a favorite weak "lead-wash;" it is applied on old linen saturated with the wash, or by means of bandages kept moist with it. Where—as in some cases of eczema—moisture seems to disagree, Dr. Neligan recommends "an ointment containing four grains of the carbonate of lead, or of the acetate of zinc, to an ounce of cold cream" (formula given further on); "and if there is much tingling or itching in the part," he continues, "two minims of prussic acid should be added to the latter, or six minims of chloroform to the former ointment."

My own system of management, not only of inflammatory but of other features of cutaneous disease, will transpire in the course of the directions appended to the several descriptions.

Ointments, cerates, pomades, etc., which are doubtless of frequent service in diseases of parts not covered with hair, are usually more injurious than useful in disorders of the scalp. This is often owing to the greasiness of their basis. Dr. Neligan commends and uses for a basis, in most cases, a couple of preparations originating with the French, viz.: Cold Cream, and Cucumber Pomade, the latter constituting of itself a useful application in cases requiring a calmative and healing remedy. I give the formula for each,—the former from the French *Codex*:—

Ceratum Galeni (Cold Cream).

R. Olei Amygdalæ	fl ȝ xvij.
Ceræ Albæ	ȝ iv.
Aquæ Rosæ	fl ȝ xiij.

"Melt the wax in the oil with a gentle heat, in an earthen vessel; pour the mixture into a marble mortar previously heated, and stir it constantly until it is nearly cold; then, by beating up the cerate briskly, incorporate with it the rose-water added in small quantities at a time."

Ceratum Cucumis (Cucumber Pomade).

R. Axungiae	ibij.
Adipis Vituli (<i>Calf's Suet</i>)	lbss.
Liquesfac simul, dein adde,	
Succi Cucumis Sativi.....	fl ȝ xxiv.

"Mix and bruise them well with the hand; set aside for twenty-four hours, then pour off the juice, and replace it by a similar quantity of fresh juice, and repeat this process ten times, adding fresh juice each time. As soon as the pomade has acquired a well-marked odor of the cucumber, melt it in a water-bath, and add an ounce of finely powdered starch, which will combine with the water and precipitate it. Allow the entire to settle, and then pour off the pomade into small vessels. To render it more white and smooth, the French pharmaciens usually prepare it for use by melting again in a water-bath, and beating it for two hours or even longer with a wooden spatula; but when submitted to this treatment it does not keep fresh for a longer period than a month, while in the former case it will keep for a year, or even longer, in a cool place."

Dr. Neligan observes, that "an excellent calmative ointment, especially useful in the cutaneous eruptions of children, which are attended with heat and itching," results from the substitution of cherry-laurel water for rose-water in the formula for cold cream, as given above.

Under the title of "*Unguentum Aquæ Rosæ*" (*Ointment of Rose-water, Cold Cream*), the "*U. S. Pharmacopœia*" gives the following formula:

R. Aquæ Rosæ	f ȝ j.
Olei Amygdalæ	f ȝ ij.
Cetacei.....	ȝ ss.
Ceræ Albæ.....	ȝ j.

"Melt together in a water-bath, the oil, spermaceti, and wax, then add the rose-water, and stir until it is cold."

The above differs in several respects from the French recipe. The substitution of spermaceti for a portion of the wax in the latter is undoubtedly an improvement. Cold cream is cooling to irritated surfaces, and has long been in use.

The following detergent ointment is from the "Pharmacopœia" of Paris:

Unguentum Digestivum Simplex (U. Terebinthinæ et ovorum vitelli). Simple digestive ointment.

R. Terebinthin. pur.....	lxiv. p.
Vitell. ovoro. No. 2, vel.....	xxxii. p.

"Mix for a long time in a glass mortar, and add, gradually, enough of the *Oil of Hypericum (Millepertuis)* to make a soft ointment." Its detergent value may be enhanced by adding a little of the acetate of copper.

The Paris "Pharmacopœia" also supplies the following emollient ointment, reputed to be corroborant and nervine, but simply emollient:

Unguentum Laurinum (Oceum Laurinum, etc.), Bay Ointment.

R. Fol. lauri.....	D. p.
Adip. suillæ.....	M. p.

"Bruise in a marble mortar, evaporate all humidity by boiling, and add *Bayberries* in powder, 500 p. Digest, and pass through linen."

Unguentum Subacetatis Cupri (U. cupri subacetatis, etc.), Ointment of subacetate of copper. Verdigris ointment.

R. Cupri subacetat., in pulv. subtiliss.....	3j.
Ung. simpl.....	3xv.

"Add the subacetate to the ointment previously melted with a moderate heat, and stir till cold."—*Ph. U. S.*—Detergent and escharotic.

Unguentum Picis Liquidæ (U. Picis seu e Picé), Tar Ointment.

R. Picis liquid.	
Sevi	sing. libj.

"Melt, and stir till cold."—*Ph. U. S.*—Stimulant and detergent. Used in tinea capitis, and other cutaneous eruptions.—*Dunglison.*

Belleville's Cerate.

R. Plumbi acet.....	ʒj.
Hydrarg. oxid. rubr.....	ʒss.
Hyd. chlorid. mit.....	ʒij.
Ceræ Albæ.....	ʒiv.
Ol. Oliv	ʒvj.

"Melt the last two, and add the others in fine powder." The above has long been used in cases of scalled head, and of chronic cutaneous diseases in general.

Unguentum Hydrargyri Præcipitati Albi (*U. Hydrargyri Ammoniati, &c.*), Ointment of white precipitate.

R. Hyd. Ammon.....	ʒj.
Ung. simpl.....	ʒiss.

"Melt the fat, and add the precipitate.—*Ph. U. S.*—Detergent. Used in cutaneous eruptions, to destroy vermin, etc.

Unguentum Cocculi, Ointment of *Coccus Indicus*.

"Take any quantity of *Coccus Indicus*; separate and preserve the kernels; beat them well in a mortar, first alone, and then with a little *lard*; then add *lard* till it amounts altogether to five times the weight of the kernels."—*Edinburg Ph.*—Used to destroy vermin, and to cure scabics and ringworm of the scalp.

Unguentum Creasoti, Ointment of Creasote.

R. Creasote.....	fl 3ss.
Adipis.....	ʒj.

"Add the creasote to the lard previously melted with a moderate heat, and stir constantly till cold."—*Ph. U. S.*—Used in chronic cutaneous affections.

Unguentum Conii, Ointment of Hemlock.

R. Conii fol. recent.	
Adipis.....	aa lb j.

"Boil the hemlock in the lard till it becomes crisp, and express through linen."—*London Ph.*—Applied to irritable tumors and ulcers.

Unguentum Hydrargyri Iodidi, Ointment of Iodide of Mercury.

R. Hydrarg. Iodid.....	3j.
Ceræ Alb.....	3ij.
Adipis.....	3vj.

London Ph.—Applied to scrofulous and indolent ulcers; as also the following, from the *Dublin Ph.* :—

Unguentum Hydrargyri Iodiuli Rubri, Ointment of Red Iodide of Mercury.

R. Hydrarg. Iodid. Rubr.....	3j.
Ung. Ceræ Albæ.....	3vij.

Unguentum Hydrargyri Nitratis (U. hydrargyri nitrati seu supernitratii hydrargyri, etc.), Ointment of Nitrate of Mercury. Citrine Ointment.

R. Hydrarg.....	3j.
Acid. nitric.....	fl 3xiv.
Olei Bubuli.....	fl 3ix.
Adipis.....	3iij.

“ Dissolve the mercury in the acid; and, while hot, add the oil and melted lard.”—*Ph. U. S.*

“ A milder ointment [than the above]—*Ung. Nitratis Hydrargyri mitius*,—is made with triple the quantity of oil and lard. It is stimulant and detergent, and is much used as an application to herpes, porrigo, and cutaneous eruptions. The weaker ointment is sometimes used in ophthalmia tarsi, &c.”—*Dunglison.*

The following formulæ are collected by Dr. Neligan :

Sedative Ointments.

R. Chloroformi.....	m. vj.
Cerati Cucumis.....	3j. Misce.
R. Carbonatis Plumbi.....	3ss.
Cerati Galeni.....	3j.
Chloroformi.....	m. iv. Misce.
R. Glycerinæ.....	fl 3j.
Unguenti Ceræ Albæ.....	3vij.
Chloroformi.....	m. viij.
Cyanidi Potassii.....	gr. iv. Misce.

The chloroform, in the above, by reason of its volatility, should be the last ingredient added. The ointment should be kept in bottles, rather than boxes or pots.

Astringent Ointments.

R. Oxydi Zinci.....	gr. xx.
Cerati Galeni.....	ʒij.
Tincturæ Myrrhæ.....	fl 3ss. Misce.
R. Creasoti.....	m. x.
Adipis præparati.....	ʒij.
Pulveris Opii.....	gr. viij. Misce.
R. Carbonatis Plumbi.....	gr. xij.
Acidi Tannici.....	gr. viij.
Cerati Galeni.....	ʒij. Misce.
R. Carbonatis Calcis præcipitati.....	3ij.
Cerati Galeni.....	ʒij.
Extracti Belladonnæ.....	gr. xx.
Glycerinæ.....	fl 3ij. Misce.

Camphor Ointment.

R. Camphoræ rasæ et redactæ.....	gr. viij.
Tincturæ Conii (Ed. Ph.).....	fl 3ij.
Unguenti Ceræ Albæ.....	ʒij. Misce.

Hemlock Ointment.

R. Fructûs Conii, in pulvere subtilissimo.....	3ss.
Unguenti Sambuci.....	ʒij.
Glycerinæ.....	fl 3ij. Misce.

"A hemlock ointment thus prepared," says Dr. N., "I have found very useful in allaying the painful sensations which attend on some forms of cutaneous eruptions."

In the foregoing General Observations, I have paid deference to the traditions of the profession and the best modern practice. All that is usually claimed for the formulæ, modes of application, and other features of this treatment, I am willing to eoneede. Fortunately for my frankness, not much is claimed. That a certain method of treatment is often ultimately sueeessful, is not all that ought to be said for the best known system.

So, *ultimately*, many cutaneous diseases may seem to "cure themselves," though nothing whatever may have been done for them. A method of treatment at once simple, swift, sure, and harmless, might well be thought an improvement on the prevailing hazardous, inefficient plan, which hardly deserves a better name than a system of surmise and experiment, based on erroneous principles. The language of Dr. Dunglison (which is not exceptional), employed in the course of some comments on *Porrigo scutulata*, may serve to illustrate the fact that many of the more eminent and experienced practitioners look with a kind of contempt on the array of learned preparations so much used in the treatment of cutaneous diseases. "The rules laid down under *Porrigo furfurans*," he observes, "must be here still more perseveringly enforced. *The whole tribe of stimulating ointments may be used in succession.* No one will always succeed, and hence the necessity of change, provided advantage should not seem to follow any particular application." As the "tribe" above alluded to is pretty large, we may fancy the concern of the patient, were he, at the outset, to be made aware of the prospect before him. It were not extravagant to look on him as the prey of circumstances: perhaps cured in a month, perhaps in a year, perhaps never.

No other feature of many genuine improvements upon old ideas and systems is so remarkable as their *simplicity*. If the student, familiar with the elaborateness of the regular methods of treatment for cutaneous disorders, with their numerous formulæ and innumerable directions, is inducted into a way almost absolutely barren of variety or learned profundity, he may feel a distrust; he may be sceptical of the universality of a plan so very different from the one which fails even after having been so carefully adjusted to every temperament, idiosyncracy, and even every particular

symptom. Let the results be my justification and my sole answer. I have given my theory of cutaneous disease: dispute it if you will, but respect my *facts*. I have rarely failed to cure a case of cutaneous disease, promptly and thoroughly; and my *practiee* has always been in strict accordance with the principles I have enunciated.

The descriptions which follow are as clear, plain, and brief, as I could make them. I append to each a few plain, simple, practical directions for its management, together with (in most instances) a summary of the remedies and modes of treatment in common use. Some of the disorders earliest mentioned, though hardly meriting the name of "disease," are still sufficiently troublesome, and therefore have received my attention equally with the more serious affections of the cutaneous surface.

CHAPTER XIII.

DEBILITATION OF THE CUTICLE. RELATING AFFECTIONS.

THOSE who possess the advantages attaching to good general health, vigorous circulation, and cleanly habits, are not, to any appreciable degree, liable to diseases of the scalp. But the number of such is not remarkably large. Thus, there are many who, although they fulfil the two conditions first named, must plead guilty in relation to the third. And a large number, who are rarely ill, and are habitually attentive to personal cleanliness, possess but an indolent circulation: a condition which is unfavorable to perfect health of the scalp and hair, since the nourishment of the tissues is supplied by the blood, and a deficiency of it also occasions constriction of the perspiratory pores,—the foundation of much mischief, as will presently be shown. Again,

many even of those who are scrupulously cleanly as regards the general surface, neglect the scalp, either totally or in part, and not only suffer scurfy secretions to accumulate on its surface, but keep it constantly covered with some greasy and stimulating compound, which obstructs the pores, and induces a state of unnatural excitation that never fails, sooner or later, to result in injury. If now to these unfavorable circumstances I add that very general American complaint, dyspepsia, or at least a weak digestion,—which diminishes the vital forces, lowers the tone of the system, and to a greater or less degree demoralizes those formative organs which chance to be most delicate, or are the furthest removed from the vital centres,—I think the elements of cutaneous disorder, so far as the scalp is concerned, are tolerably well supplied. If not, there may be added, the violent change of temperature constantly visited upon the scalp, and the unreasonably harsh and injurious treatment which that tender integument commonly suffers, from the immoderate use of sharp-toothed combs and stiff brushes:

The circumstances above enumerated, as every one knows, are common enough; and the fact that serious diseases of the scalp are notwithstanding by far less general than might be expected, conveys a standing compliment, of the highest description, to the normal energy and integrity of the constitution, as evinced in its indomitable faithfulness to its pristine forms and modes and processes, in the face of the most persistent and damaging opposition. It displays its wonderful conservative and recuperative powers in various other portions of the system; but in none other does it demonstrate those powers more signally than in that which embraces the scalp and hair.

While the more formidable diseases of the scalp are comparatively infrequent, the ease is far otherwise with

several minor disorders. The least of these may be painful or annoying; and to others may be traced most instances of gradual loss of hair, and even many cases of violent eruptive effusion. They arise variously from the circumstances mentioned in the first paragraph of this chapter. The most important of the number I term a *Debilitation of the Cuticle*.

I regard the state expressed in the above phrase as a fruitful source of mischief. It is the starting-point of numerous annoying and obstinate affections which afflict the scalp and in many cases greatly injure or destroy the hair.

In order to fully comprehend the history and nature of this disorder, and the reason of its peculiar frequency in the seat of the hair, we must call to mind certain physiological facts. In every part of the cutaneous surface, as elsewhere in the system, *vital processes* are constantly going forward, requiring for their motive power a portion of that mysterious principle of life which we term *vital force*. Now, the amount of this force cannot be materially increased in any given locality while its total quantity in the system remains the same. But some regions of the body require far more of this life-power than others, since the processes which occur within their province are more complicated and laborious than we find them elsewhere. And it is in these regions, therefore, we may the soonest look for derangement, because, while the motive force remains substantially the same, various circumstances may often increase the amount of labor to be performed, and hence that labor must be accomplished inefficiently, or in part neglected. Now, there is no other considerable portion of the cutaneous surface that can compare with the scalp, in the extent and variety of the labor required of it. Let us, for a moment, consider the scope of these extraordinary duties.

Were we to examine the surface of the scalp with a powerful magnifier, we should find it very thickly sown with minute punctures, which represent the mouths of the sudoriferous (or perspiratory) ducts, or tubes;—of these more than three thousand thus terminate in every square inch of the superficial measurement. The scalp is likewise peculiarly rich in sebaceous glandulæ, or tubes, which convey the lubricating and softening sebaceous fluid to the surface. Now, when we reflect, that every one of this vast number of minute channels (which frequently are above a quarter of an inch in length) is lined with a *continuation of the epidermis or cuticle*,—and that each of the millions upon millions of cells which constitute these continuations, is an active vital agent, demanding a constant supply of vital force, we must perceive that the scalp is really a very busy portion of the system. But all is not yet told. Every square inch of the scalp has likewise to propagate and sustain from five hundred to seven hundred hairs. When we have added this responsibility to the former, we shall begin to realize the magnitude of the perpetual task assigned to this portion of the cutaneous surface.

It is obvious that favorable conditions are essential to the proper performance of these varied and laborious duties. Not only must the supply of vital force be adequate and continuous, but the state of the surface must be such that every operation connected with the functions of the scalp may go forward with the vigor contemplated in the design of nature.

That these conditions are very rarely fulfilled, will be apparent on a moment's reflection, or a glance at the first paragraph of this chapter. As it is the *cuticle* which suffers the most from mismanagement, and is the integument so generally overworked, impoverished, and abused, it is that tissue, in particular, which we so often find in a state of debilitation.

The manifestations of this disorder are various, but it is always attended with a weak, lifeless, and shrivelled condition of the skin, and is also generally marked by the presence, in greater or less profusion, of the branny particles termed dandruff, together with occasional irritation of the surface. It is frequently accompanied also, by deficient vitality in the hair, which is faded, dry, brittle, and prone to split at the ends. In this state, the hair is readily detached, with the brush or comb, and baldness is inevitable, unless that result be anticipated by a course of judicious treatment.

I have said, that debilitation of the cuticle is "frequently" accompanied by this state of the hair. But, when we remember the intimate connection of the latter with the former, we perceive that a serious debilitation of the scalp could not long continue without materially affecting the hair. When, however, the cuticular weakness is but slight or recent, of course the effect on the hair may depend upon circumstances. Thus, the exact amount of debilitation may not be indicated in the appearance of the surface; again, the quantity of the sebaceous secretion which is admitted into the strands of the hair, since it varies greatly in a comparison of examples, may not unfrequently determine the *apparent* condition of the hair, independently of its actual state.

I have dwelt sufficiently on the characteristics of this disorder to illustrate its nature and show the necessity of attempting its cure. This necessity will be still more apparent, when we come to survey its consequences: for it cannot long continue without occasioning complications more or less serious. To some of the more usual, though perhaps less striking, of these, I purpose to devote the remainder of the present chapter.

SUPPRESSED SECRETION.

When the functions of the external skin are performed

in a thorough and energetic manner, the insensible perspiration* issues from its myriad pores with perfect freedom, and one of its most important uses in the system is thus perfectly conserved. But if, through deficient energy, or mechanical obstruction in the form of scurf or grease, this function be ill-performed, the repressed perspiratory moisture, though to a great degree it is returned to the circulation, yet to some extent accumulates,—or at least certain matters held by it in solution accumulate, in the form of an inspissate fluid, which distends the pores and even insinuates itself between the cuticle and the cutis. In these situations it grows more and more morbid and poisonous, and assumes the character of a local irritant, powerful in proportion to its own noxiousness and the degree of susceptibility of the various tissues subjected to its influence. The varying nature of the circumstances last mentioned occasions a corresponding variety in the manifestations, as will presently more fully appear.

Suppression of the perspiratory fluid may be viewed as reciprocal in action with the cuticular debilitation which we lately discussed ; for it may give rise to the debilitation, or the latter may occasion the suppression. The former effect is produced by the chronic excitation and inflammation of the integument which must follow the confinement of stagnant poisonous matter in contact with its living tissues. Such a state, it is apparent, could not long be sustained without a depression of the vitality of the excited and inflamed region, and the exhaustion which follows over-exertion. And this lassitude of the cuticle, since it would be shared by all its organs, would encourage the continuance of the suppression, by diminishing what might be termed the desire of the glandulæ or tubes to rid themselves of the

* Properly termed *transpiration*.

deleterious matter, and also their actual ability to effect that object, even though all mechanical obstruction had meanwhile been removed from the surface.

The symptoms of this disorder vary greatly; but the following details may be assumed to be more or less general. The confined, inspissated fluid, as it constantly accumulates, from time to time (or perhaps more steadily) forces its way to the surface, where it evaporates to dryness, and exhibits itself either in the form of branny particles (dandruff) or of more continuous layers of hardened scurf. The hair soon begins to lose its lustre and elasticity, becoming gradually dull, harsh, and languid. It often betrays a brittleness which imposes great care in dressing it, lest a large number of hairs should be broken off. The ends of the hairs frequently split, to quite a distance from the point. They fall out readily, sometimes even before the changes just mentioned have manifested themselves, and this loosening may be either general, or confined mainly to some particular region, as the crown of the head.* Some of the effects first mentioned are also seen in the beard, which, like the hair of the scalp, also grows dry and harsh; but, owing to the greater size of the hairs of the beard, and their superior vigor, they do not so readily break as bend at short angles, exhibiting, when straightened, little spots, of a light color, in every place which has been thus bruised. It may frequently be observed, when a hair is detached from the scalp, that the end which had been next the surface is more or less thickened, for the space of perhaps the eighth of an inch, with a whitish or yellowish accretion, which is so closely united with the shaft as to seem identified with it. This mass of adhering matter—which is popularly thought

* The Falling of the Hair, whether general or local, is fully treated in the chapter entitled "Alopecia."

to be the *root* or *bulb* of the hair—is usually nothing more than portions of flesh-like substance adhering to the shaft, or of matter deposited on it by the repressed perspiratory secretion.* The root, though it may be swollen and diseased, remains in its follicle or sheath, either wholly or in part, and it is only occasionally that a portion clings to the shaft and is torn away with it. If dead, it is gradually removed by the absorbents; but, if it be destined to live, a new shaft proceeds from it, and finds its way to the surface, through the channel vacated by the old. The substance in question is also frequently mistaken for a living creature, termed, in popular phrase, the “*Hair-eater*,” which is further mentioned in the latter part of the chapter entitled “*The Steatozoön Folliculorum*.”

The presence of the poisonous matter of the suppressed sudoriparous secretion is the immediate cause of several more or less serious affections: which, with their ultimate modifications and effects, will now be briefly described.

Inflammation of the Surface of the Cutis.

When the surface of this very sensitive membrane becomes inflamed, the nerves which abound in it at once record their protest, in the form of a severe pain, which usually seizes us without warning, and protracts its excruciating visitation indefinitely. The seizure seems mysterious, since we are perhaps conscious of no irregularity of the bodily functions—the usual cause of a pain in the head; and perhaps even the physician mistakes it for a form of “*nervous headache*,” and treats

* The term “secretion,” in physiology, applies to the elaboration or *separation* of the materials of the blood, chiefly by the glands,—or to the thing so separated. Sweat is a *simple* secretion.

it (of course unsuccessfully) with internal remedies adapted to cases of nervous weakness. The disorder is often given up as incurable.

Inflammation of the Inner Surface of the Cuticle.

This disorder is announced by a vexatious pruritus, or itching, sometimes severe and persistent, which may begin at any time, or on any part of the scalp, and is relieved but temporarily by rubbing or scratching. The counter-irritation produced upon the surface by this operation soon subsides, and the original sensations recur with even increased violence. The various remedial agents which are resorted to under the impression that the derangement is of the surface, instead of removing the disorder usually only aggravate it, even though they may seem at first to be of service. This is more particularly the case when the preparation is of a stimulating nature. The inflammation—which in many cases has been greatly increased by mismanagement—eventually extends through the integument to its outer surface, which now becomes so sensitive that dressing the hair is a disagreeable and sometimes even painful operation. From this stage the developments depend on various circumstances, such as the state of the constitution, the degree of sensibility of the parts affected, and the nature of the treatment pursued. The most usual subsequent complication is the formation of scurf and dandruff, sometimes in large quantities—a symptom susceptible of but temporary alleviation through the employment of ordinary remedies of a detergent nature. This subject will be treated at length in Chapter XVI. The other and less frequent ensuing manifestations are described in the chapters on eczema, porrigo, and canities, or loss of color of the hair, and are alluded to in various other chapters. It is proper to remind the reader, however, that the state of *inflammation of the cuticle*, so

pregnant with mischief, does not always arise from an inflammation of its inner surface, and that therefore it would be a mistake to refer these ultimate demonstrations wholly to this state, or even to its cause, the repression of the sudoriparous fluid, notwithstanding that the latter, being nearer to the position of an ultimate abnormal element of derangement, has a more general sweep, and, as we have seen, does actually stand for a large share of the disorders which afflict the scalp.

The nature of the disorder which I have termed a debilitation of the cuticle, is obviously such that it may continue indefinitely. In most cases, if left to themselves, it will very probably last for years. A knowledge of its nature is also plainly essential in those who undertake its alleviation or removal. Through a lack of this qualification we find even skilled physicians failing signally in the attempt to cure the various disorders which result from it, while empirical efforts are even more unfortunate than they usually are in other species of disease. Thus there are few who do not know, from their own unpleasant experience, how delusive are the promises of those compounders of nostrums who assure the public that to "remove and prevent *dandruff*" is one of the numerous virtues of their "new discovery." Of course, a preparation composed largely of *alcohol* would be effectual in removing such impurities as chanced to be present at the time of its application; so, in most cases, would soap and water. But what is needed is a *remedy*, not a *wash*; something which cures the disease, and not merely affords a temporary alleviation of one of its *symptoms*. Such a remedy should be capable of removing all obstacles to the free passage of the secretions to the surface, of subduing the chronic inflammation of the integuments, and

of restoring their activity and pristine vigor. In other phrase, it should be at once a *detergent*, an *emollient*, and a *tonic*. How absurd, then, to expect benefit from the greasy and stimulating compounds which are offered us in such bewildering profusion.

The importance of a prompt attention to the disorders which we have been discussing—though one would fainey it already suffieiently plain—is rendered still more strikingly obvious by a contemplation of their possible ultimate results. It will suffice, in this place, to merely afford a hint of the serious diseases which not infrequently are induced or precipitated upon the scalp, by cuticular debilitation and the states connected therewith. I observed, in my remarks under the head of "Inflammation of the inner surface of the cuticle," that from the stage of integumentary inflammation, induced by the presence of the morbid matter of the suppressed secretion, the developments "depend on various circumstances, such as the state of the constitution, the degree of sensibility of the parts affected, and the nature of the treatment pursued." It is apparent that here is afforded a wide range of possibilities. I will speak of one or two of the more serious complications. All are aware, that in the case of a blister, which is the result of heat applied to the surface, the serum or watery part of the blood transudes from the capillary vessels to the surface of the cutis, or sensitive skin, and raises the cuticle therefrom so as to form rounded elevations, corresponding in size with the extent and violence of the injury, and the abundance of the serum to be secreted. Now, the inflammation produced by the exciting causes which we have been commenting upon in this chapter, may occasion phenomena precisely analogous to those of a blister caused by the application of heat externally. But the history of the *constitutional* affection is not commonly so brief and trivial as is that of a mere blis-

ter ; for, in the form of the little vesicles, full of serum, which mark the former, we find announced the first symptom of *Eczema*, a disease which is often grave and obstinate, and is especially serious in the chronic form. A full history of this disease, with an account of its numerous relationships and complications, is given in Chapter XVII. In numerous cases we find that while the sudoriparous secretion contains an inordinate share of poisonous substance, the tendency to inflammation in the integuments is greater than we find it to be in perfect health ; and the full habit of the system insures an abundance of material for the operation of the abnormal processes of cutaneous disease. In such instances, instead of the minute watery *vesicles* which mark the incipiency of eczema, we observe larger elevations rapidly forming, filled with *pus*, which is the substance of the secretions and transudations of eczema in a state of *maturity*, or destructive change, occasioned by the comparative foulness of the substances to be eliminated from the system and the urgency of the constitutional exigencies thereby created. The elevations are called *pustules*, and they are one of the first symptoms of *Impetigo*, a serious disease, which will be found described minutely in Chapter XVII. Another grave complication with the state of cutaneous debility is mentioned in Chapter XIV, under the head of "Premature Grayness."

I have thus endeavored to show that a state of debilitation in the scalp, often induced by neglect, may be the source of numerous disorders of the integuments and the hair. Indeed, I could urge with plausibility, that were the scalp but kept clean, and judiciously managed, many affections of those parts would hardly be known. It may safely be said, that, with a healthy state of the system in general, the above conditions would insure

the hair and scalp against almost every variety of disorder which is incident to them.

TREATMENT.

Debilitation of the Cuticle.—As no medical work, so far as I am aware, so much as mentions this disorder, as one calling for especial treatment, I can give the reader no wide range in the selection of remedies. Of the various nostrums spoken of in the Appendix to this volume, some of them, it is true, pretend to “strengthen the scalp;” but I know of none which merits a place in this important department.

I employ, with success, in the treatment of Debilitation of the Cuticle, the *Tincture of Wild Indigo Root*, prepared as follows:—

To 4 oz. of the pulverized root of the Wild Indigo plant, add one pint of alcohol, diluted with an equal quantity of soft water. Let the mixture stand six or eight days in a covered vessel.

Moisten the scalp thoroughly with this liquid once in twelve hours.

When the affection is recent and slight, a few applications of the above will generally suffice; but, should it be one of long standing, more time and patience will usually be needed. If, as a consequence of long neglect, grave results appear, like the threatened loss of all the hair, another remedy, mentioned in the next section, may be substituted with advantage.

Suppressed secretion.—This disorder is in most cases effectually removed by the use of a *Tincture of Black Alder Root*, prepared as follows:—

To half a pound of the pulverized root of the Black Alder, add one quart of alcohol and one of soft water; close the mouth of the vessel, to prevent evaporation, and let it stand eight days: it will then be ready for use.

Apply thoroughly, once or twice in the day.

An excellent *tonic wash* for the scalp may be made from the bark of the above plant, prepared as directed for the root, excepting that twice the quantity of the former should be used (1 lb.), in order to obtain the requisite degree of strength.

Inflammation of the Cutis or Sensitive Skin.—The pain in the head that results from this affection, is relieved by the following preparation:—

To half a pint of buds from the *Balm of Gilead* tree (gathered just before the development of the leaf), add one quart of New England Rum, or of alcohol diluted with an equal quantity of soft or distilled water. Bathe the head all over with the liquid two or three times in a day. In cases of even inveterate headache proceeding from the above cause, a decided change will be observed in three or four days, and the cure may be made perfect by a continuance of the application.

This simple preparation is also very useful in subduing the pain and inflammation of a bruise; and, for malignant eruptions, it is hardly surpassed in efficacy by any other remedy.

Inflammation of the Inner Surface of the Cuticle.—The nostrums which are generally resorted to for the alleviation of this affection, being generally of a stimulating nature, most usually serve to aggravate the symptoms, and are thus rather harmful than beneficial. They consist of a solution of salt, of brandy and olive oil, castor oil and alcohol, or even tincture of cantharides. Some of these may, at first, seem to be of service; the illusion, however, is usually of but brief continuance.

I have used with perfect success, in this disorder, the *pure juice of the Pine Apple*. It may be preserved by the addition of a small quantity of alcohol. The head should be carefully wet with this liquid two or three times in a day, until the irritation is entirely subdued: a result which is certain, and, usually, very prompt.

The use of hard brushes and fine combs should be dispensed with during the existence of this affection.

CHAPTER XIV.

LOSS OF COLOR OF THE HAIR. BLANCHING. GRAYNESS.

(*Canities; Trichonosis poliosis.*)

GRAYNESS of the hair is not normal ; it was not contemplated in the original scheme of the human organization. It is an incident of life—generally of mature life,—and indicates a diminution of the vital force, or its accidental partial preclusion from the affected region. The first growth of children's hair is often white or flaxen, but never gray. A gray-haired infant would be a phenomenon indeed.

In examining the various phenomena which involve, or consist in, a change in the color of the hair, we observe many peculiarities relating both to the nature of the change and to the time consumed in effecting it. Thus the change may be a mere gradual fading, such as was referred to in the last chapter—a result of deficient nourishment connected with a debilitation of the supporting surface ; or here and there a single hair is found to have changed, becoming gray or white with apparent suddenness ; or a lock of hair turns gradually gray, while all the remaining hair retains its original shade ;* or the head exhibits an evenly distributed mixture of gray hairs, and hairs of the original color, the former slowly increasing in number ; or, finally (though the

* This peculiar phenomenon will be treated in Chapter XV., under the head of "Vitiligo."

list is by no means exhausted), a part or the whole of the hair of the head and face becomes suddenly and permanently blanched. These peculiarities indicate a variety in the *causes* of the change of color, and justify the classification soon to be presented.

Dr. Copland and others state that the hair usually turns gray first at the free extremities. My experience teaches me that so far from this being the case, the grayness *never* begins at the free extremities, the portions nearest the skin *invariably* exhibiting the first signs of grayness. It is true that in frequent examinations of the long hair of ladies we sometimes find that an inch or so of the free extremities is more or less dull and faded, and now and then the hairs are even *split* for the same space. But this is not grayness, and the symptoms referred to are merely the result of the closing up of the free ends from neglect, thus preventing the free passage and escape of the softening sebaceous fluid contained in the strand, and permitting the ends to become dry and lifeless. All are aware how much more frequently, in numerous instances, the portion of ladies' hair *next the scalp* is brushed and smoothed than the remainder. Many neglect almost wholly to brush the *free ends* of the hair. If this were frequently done, however, the softening fluid within the strand would be constantly forced *through* the tube, and the strand would then, through its whole length, be kept soft and healthy. I may add, that all the "treatment" necessary, where the hair of ladies is dry and split at the free ends, is the mere clipping off of a portion, and subsequent occasional brushing. The subject of the management of the hair is treated at length in another part of this work.

White hairs that fall out are seldom reproduced. Dark hair turns gray earlier than light, and the hair of men sooner than that of women. Sometimes it is the

beard which first begins to change; sometimes the hair of the scalp. One may see a man with a head entirely gray, and yet his beard will not have been changed at all; while cases just the reverse of this are also common. The former, however, is the more usual order, the change beginning, in most cases, at the temples. Though men usually, in this country, begin to be gray at from thirty-five to forty, many are more or less gray at thirty, twenty-five, or even twenty; while, on the other hand, the cases are not rare of men whose hair has retained its original color till the age of forty-five, fifty, sixty, and even seventy years. Men who attain extraordinary age sometimes afford us the phenomenon of gray hair returning to its original color many years after the period usually characterized by the total and final discharge of color. Thus, one John Weeks, who lived to the great age of one hundred and fourteen, was extremely gratified, and no doubt surprised, a few years before his death, to find that his white hair, which still remained, though it had long before lost its color, had actually recovered its original brown hue. Sir John Sinelair mentions the instance of a Scotchman, dying in his one hundred and tenth year, who, a short time before that event, had a similar extraordinary piece of good fortune. It is also related of one Susan Edmonds, that at the age of ninety-five her hair changed color, from gray to black; but that it relapsed to gray before her death, which occurred at the age of one hundred and five.

The philosophy of these changes has received the attention of numerous medical writers. Nothing very definite, however, in the way of a solution of the problem, has been thus far reached. In the opinion of Dr. McCartney, as stated by Dr. Copland, "an organic action must be admitted to exist in the substance of the hair, in order to account for the changes to which it is subject,

and which sometimes take place so rapidly as otherwise not to admit of explanation." This savant explains the sudden change or discharge of the color of the hair, by supposing the phenomenon to be the result of absorption of the coloring matter,—or, in other words, its sudden withdrawal from the hair-strand, and translation into the circulation. I may observe, in reference to this theory, that the widest latitude which our knowledge of the structure of the hair will permit to the *premises*, is not sufficient to demonstrate the *conclusion*. That the hair is an organized, vitalized structure, I am not willing to deny; but when we reflect on its peculiar nature, which is almost that of a solid body, with no signs of a circulation, or of nervous endowment, I think we shall find it difficult to realize that the particles of coloring matter are susceptible of so prompt and thorough a translation. The only agency which, in my opinion, is perhaps capable, under exceptional circumstances, of effecting the change in question, will be mentioned when I come to the special examination of these cases. To do this author strict justice, however, I will here transcribe a passage from Carpenter.*—"In dark hairs, the pigmentary granules are frequently scattered between the fibres: but they are frequently found in greater abundance *in the central cells, where they form a dark spot in the middle of the transverse section*. Sometimes, however, no such collection is seen; and whatever pigmentary matter exists in the hair is equally diffused through the whole of it, or is even accumulated rather towards its exterior." If we may suppose that in the case of sudden loss of color of the hair, the coloring particles had lain in the central parts of the strand, as described in the words I have emphasized above, the theory of Dr. Macartney will seem more

* *Elements of Physiology.*

plausible, since a withdrawal of the matter from the medullary portion* alone, by a quickening of the ordinary powers of nature, is a supposition far from absurd. Dr. Copland observes, of the ordinary blanching of the hair,—or, what I term “constitutional grayness,” that it “appears to arise from a diminished secretion of the coloring matter of the bulbs or follicles.” Withof states that “the bulbs of those hairs which have become white, are somewhat atrophied.”† The latter statement, considered in relation to certain cases of constitutional grayness, is probably correct. The opinion of Carpenter, though not susceptible of demonstration, is also worthy of respect. It is my opinion, that it may, in some cases, be the sole cause of the deficiency in color, and in more numerous ones it may operate in conjunction with the cause which I shall now endeavor to show has a very general application to cases of grayness.

In previous chapters of this work I have essayed to demonstrate that each of the normal colors of the hair results from the presence, in appreciable quantity, of some mineral or metallic element, which in other situations is the base of a similar color. It is my purpose to render probable, that *lime*, since it is found in gray hair, is the basis of the abnormal shade. The arguments which I employ in support of this theory will soon be presented.

For the sake of convenience, I will classify the causes of the phenomena which we are discussing, as Constitutional, Emotional, Paralytical, and Premature.

Constitutional Causes.

The secretion of Lime in the system begins almost with life itself. It is largely employed in the formation

* See description of the structure of the hair, in a previous chapter.

† Wasted.

of bone; and hence, while the latter continues to be elaborated, there is a continuous separation of lime from those articles of food which contain it, and an immediate appropriation of it where it is needed. But while the supply may not diminish, the demand may lessen, or cease altogether, and this either temporarily or permanently. It is well known that numerous articles which have been used as food, though they may contain no element which is in the least essential in the human structure, eventually demonstrate their presence in the circulation. That some of their elements are finally secreted from the blood, is proved by the fact that they may be found in the perspiration. But that they are not uniformly and perfectly eliminated from the system by means of the usual evacuants, is proved by the numerous disorders and temporary derangements which may be induced by them. Any one familiar with the capillary circulation is aware that almost every part of the system is accessible to those elements which the circulation may contain in solution. Now, the necessity for the elimination of foreign matter is perpetual; but the *means* to this end do not always possess the same character of constancy. As the powers of life decline, the efficiency of the excretory functions is apt to become impaired; the vital operations of the cutaneous surface proceed with comparative languor, and the normal integrity of the organs which produce the hair is in many cases but imperfectly conserved.

Confining our deductions from the foregoing to the instance of *lime*, as one of the foreign elements present in the circulation, we perceive that a period of life may be reached when this material may begin to accumulate in the circulation faster than it can be disposed of through the ordinary channels, while the absolute necessity of in *some* way eliminating it still remains. It must be secreted from the blood; and the surplus,

above the amount which the ordinary evacuants can carry away, is *deposited* somewhere in the system. The weakest organ, the feeblest secreting surface, will probably be its final recipient, since the protest which the unfortunate tract is able to make will not be strong enough to avert the unwelcome intrusion. Hence occur *ossifications* of various organs, as, for instance, the heart. If there be no vulnerable region except the scalp,—which, as was shown in a previous chapter, is peculiarly liable to become debilitated,—is there any strong reason why we may not imagine the surplus lime tending thitherward, and (being thus forced upon the organs which produce the hair) finding its way, like a foreign invader, into forbidden territory? In a state of vigorous health, the formative organs might be expected to effectually resist the injurious influx; but, once debilitated and demoralized, they may no longer pursue the habit of election with unerring nicety, but may fall to appropriating the spurious pabulum as though it were healthful sustenance perfectly adapted to their needs.

I have thus shadowed forth what I am inclined to consider the chief cause of "Constitutional Grayness." It is obvious that debilitation of the scalp need not be excessive, to give rise to this condition. The surface may even present an appearance of comparative health, while the functions of the various organs beneath are being but indolently performed, and the region of the scalp is actually the least vigorous portion of the system. Accordingly, it may often be observed that the scalp or one whose hair is turned gray presents no particular sign of disease or debility,—being clean, and of the proper hue and temperature. The organs connected with its integuments are only feeble in a comparative sense.

From the foregoing observations it will be readily inferred that grayness arising from constitutional causes

is not necessarily a concomitant of age alone, but may occur at any period consistent with the operation of those causes in the system. Thus, in the case of those whose bones become sufficiently strong to support the weight of the body at the early age of nine or ten months, we find them more or less "gray" at from sixteen to twenty years of age. It is unnecessary to point out the significance of this fact, considered in relation to the theory just advanced.—It may be observed, in passing, that the parents and friends of youths whose hair has begun to change thus early in life, instead of regretting what they may choose to term an unseasonable and deplorable visitation, should rather feel like congratulating them on their escape from a far more signal calamity: for it is probable that in most cases of this sort the phosphate of lime which has found place in the hair, had its access to that region been denied, would have been precipitated upon some internal organ, thus effecting an ossification, a very grave and usually fatal disorder.

There is no relief for grayness of this kind. I do not know what would result from a systematic and long-pursued exclusion of phosphate of lime from the system (a mere matter of diet), but cannot doubt that though a restoration of the original color of the hair may be impossible through this means, further change might in many cases be retarded, if not wholly prevented, for quite a period. However this, no antidote or sovereign medicament has ever been discovered, whether to be administered internally or externally, for restoring the original color of the hair made gray from constitutional causes.

Emotional Causes.

There have been numerous instances in which the color of the hair has been suddenly discharged, owing

to intense, prolonged mental excitement, accompanied with agony of the spirits. As no other phenomenon occurring in the human system could well be more marvellous, there are those who doubt, or affect to doubt, that it ever occurred; and it is partly to remove such doubts, if real, and also to afford the general reader a few items of more than usual interest, that I append the accounts of several of the better authenticated cases of sudden blanching, including one or two coming under my own observation.

One of the best known historical instances, is that of Maria Antoinette, the unhappy queen of Louis XVI. She passed the terrible night previous to his execution alone with him. In the morning her hair was observed to be blanched, to a degree which under ordinary circumstances could not have been looked for in many years.

Mary, Queen of Scots, and Sir Thomas More, may also be mentioned in the same connection. The lamented Horace Mann of our own time, is another instance of one whose hair had turned gray from emotional causes. The London journals not long ago gave an account of a lady who, on the morning of November 19th, 1853, received a letter conveying intelligence of the shipwreck and death of her lover, while on his way home to be married. The moment the truth flashed upon her, she fell insensible, and so remained for five hours. On the following evening, her sister observed that her hair, formerly of a deep brown color, had become "as white as a cainbric handkerchief." Her eyebrows and eyelashes, however, retained their color. She suffered long from the effects of the terrible shock, undergoing repeated convulsions, and languishing under a constant feeling of exhaustion. After a time, the hair which had been turned white fell off, and was replaced by a crop of gray hair, which still remains of that hue. Professor Manton mentions a case related to him by a

literary lady of his acquaintance. The lady's aunt, upon waking one morning, found a beloved sister lying dead by her side, and was so shocked by the discovery that in a few days all her hair became gray. Thornton speaks of a gentleman, a native of Languedoc, who was so violently affected by the announcement that he was condemned to death, that his hair was blanched in a single night. The same author mentions the case of a Spanish gentleman whose hair was thus affected in the same space of time, though he had only "incurred the risk of a serious punishment." An instance is also furnished by Joseph Turner,—that of Don Diego Osorens, a noble Spaniard, who, upon being surprised in the king's garden, where he had arranged to meet a young lady of the court, was imprisoned and condemned to die, for the offence was capital. The terror inspired by this sentence resulted in the turning his hair completely gray. Touched by the spectacle, the compassionate gaoler went to King Ferdinand with the account, and easily obtained a pardon for the unhappy prisoner, who, in the opinion of the king, had been "sufficiently punished for his fault." In the time of Cæsar, a young nobleman, who was condemned to lose his head, passed the night previous to the fatal day in a state of such fearful and agonizing apprehension, that in the morning the comeliness of his face was gone; it was like that of a dead man. His hair and beard, too, were turned gray, and in short he was now so changed that when the emperor beheld him he was persuaded there was some deception, for he could not believe in the identity of the prisoner. He therefore had him examined, and caused his hair and beard to be tested, fancying them changed by art; but, becoming convinced there had been no deception, and being greatly moved at the pathetic spectacle before him, he pardoned the wretch and let him go.—Esquire Boyle, who was in Ireland, in the

county of Cork, during the Rebellion, tells of an Irish captain who, while on his way to avail of the proclamation of pardon issued by Lord Berry to such as would surrender themselves and lay down their arms, was met by a party of English, in the temporary absence of the governor, and made a prisoner. The poor man was so terrified with the fear of being put to death before the return of the governor, that his hair, till then red throughout, became quickly variegated with locks of white, the contrast affording a most singular spectacle. Dr. Herbert relates, in the *Archives Générales de Médecine*, a story of a woman, aged about thirty, who became so agitated at having been summoned before the Chamber of Peers, as a witness upon the trial of Lovel, that in one night her hair was completely blanched, and furthermore, a furfuraceous eruption appeared on her scalp, her chest, and back. It is related of Henry III., of Navarre, that he was so grieved and disturbed upon learning the concession of the Edict of Nemours, that in the space of a few hours a "part of his mustachios whitened." Another person, it is likewise said, was by the same event so profoundly affected that some of his eyelashes became blanched. An instance is mentioned in the *Encyclopædia Metropolitana* of a banker whose financial affairs gave him so much anxiety, during the great panic of 1825, that he became gray in three days. Dr. Clarence knew an aged man with snow-white hair, whose serious countenance was deeply marked with the furrows ploughed by care and misfortune. In a communicative moment he said to his friend, "My hair was as thou seest it now, long before the latter season of my life. More energetic in their effects than assiduous toil and long-erring years,—grief and despair at the loss of a wife most tenderly loved whitened my locks in a single night. Judge then the force of my sufferings: I still bear them in frightful remembrance!"

The sexton of St. Joseph's Cathedral, Vienna, being a man of extraordinary nerve and boldness, was accustomed to stand on the pinnacle of the tower, whenever the emperor made a grand *entrée* of the city, and wave a banner while the pageant was going by. When Leopold, who had just been chosen emperor at Frankfort, was about to enter the city, the loyal sexton—still anxious to keep up his singular custom, but finding himself by this time grown too old and infirm for the fearful venture—publicly declared that any honest young man who would mount the pinnacle and wave the banner for Leopold should have his free permission to woo and win his daughter. Gabriel Petersheim, who (though disliked by her father) already was beloved of the girl, at once accepted the offer,—much to the disgust, doubtless, of the sexton, who went and arranged with two desperadoes, Lawrence and Albert, that they should close the trap-door of the upper stairway while Gabriel was above, thinking that, as the emperor was to enter toward evening, no one need be the wiser, and the lad must certainly fall to the pavement before morning. The two wretches performed their part of the contract; and their intended victim, finding his descent effectually barred, was now confronted with the choice either of clinging, through a cold winter night, to a slender stone spire, with his feet resting on a surface hardly ten inches in circumference, or of precipitating himself to the pavement at once, and thus ending the matter. But Gabriel was a youth of firm will and hardy constitution; he clung to that cold column till morning! But his rescuers were amazed to observe that his late curling locks were white as snow, his wonted rosy cheeks were yellow and wrinkled, and his eyes, before so bright, were now sunken and dim. One night of horror had placed him forty years nearer his grave.—I conversed with a gentleman who at that time

resided at New Bedford, Mass., on the evening previous to a terrible calamity which befell him. His beautiful hair was black and exceedingly fine. I remarked that its superior in beauty, or even its equal, could scarcely be found. I met him, toward the close of the following day, when the transformation in his person was so complete that I could with difficulty identify him. His features wore the appearance of those of a criminal condemned to death; a marvellous change had occurred in his hair, which, instead of its late glossy black, now presented the frosts of seventy years.

Of the eminent writers who have speculated upon the cause of these surprising transformations, I may mention, as among the most eminent, Vauquelin and Wilson. The first observes that, "at the critical moment when nature is in revolution, and when, consequently, the natural functions are suspended or changed, an agent is developed in animal economy, which passes into the hair, and decomposes its coloring matter."* He concludes that this mysterious agent must be an acid. Wilson's speculations are less definite, but it must be confessed that they are ingenious. "These phenomena," he says, "may be the result of electrical action; they may be the consequence of chemical alteration wrought in the very blood itself; or they may be a conversion for which the tissue of the hair is chiefly responsible."

There is no phenomenon of the system that more persistently evades elucidation than that of the sudden discharge or change of color of the hair. It is impossible, in the present state of physiological science, to arrive at a definite solution of the mystery; but I think it possible to go much further toward it than Vauquelin

* When we call to mind the *nature* of the coloring matter of the hair, as explained in a previous chapter of this work, we shall find it difficult to understand how its "decomposition" could result in a discharge of color.

and Wilson have gone. To accomplish this I shall pursue a course very different from that of those modern unskilled philosophers who are ready to furnish the world with positive answers to every question in physies that may be propounded. Thus, accepting the fact of the phenomena of "table-tipping" as truth, they at once declare that the agent which works the miracles is *electricity*. No philosopher thoroughly acquainted with the nature of that fluid can forbear laughing at the theory of these pseudo-scientific gentry. The same sort of *savans* declare, with the usual degree of positiveness, in regard to the sudden blanching of the hair, that some organizations are so susceptible to emotional influences that intense grief or fright has the effect to *suspend the operation* of the darkening elements of the body. Now, what do they mean by this loose phrase, "suspend the operation?" Operation is the work of something having the power to operate; whereas, the "darkening elements of the body" are the *result* of operation. They are instruments, not forces.

Let us examine the cases themselves. We find that sudden blanching occurs not to light but to dark hair. In that gradual approach of grayness which happens in the course of nature, I endeavored to show that the grayness is originally produced by the presence of lime in the hair, and that as the iron which had occasioned the former black or dark color is gradually absorbed, or otherwise eliminated, the grayness becomes lighter, and thus the hair eventually is white or silvery. There is no other portion of the system, as I have frequently remarked, more liable to debility than that which supports and nourishes the hair. In this state of debility it is of course more susceptible to extraneous influences than in its normal state; and hence, during that period when the mind and soul together are so violently affected, as in the cases lately described, and so pal-

pably assert their superiority over that mechanical affair, the body, it is philosophical to infer that the system is powerfully and injuriously influenced, and logical to conclude that those parts which chance to be weakest, and therefore less able to resist damaging influences (as, for instance, the scalp), will suffer in some sort of proportion to their helplessness. When this dreadful shock of the superior parts occurs, and the operations of the vital galvanic force are more active than is usual, it were not too wildly fantastic to find every thing movable in the system *moving*, simply because it could no longer remain stationary, and seeking such affinity or such practicable new quarters as should on the instant be revealed. And thus quickened by extraneous force, behold the lime contained in the circulation, at this moment of supreme advantage, immediately assuming that place in the hair which in the ordinary course it could not have attained perhaps for many years.

If this be thought too poetic a fancy, perhaps the following—which may be considered separately or in conjunction with the former—may seem more plausible. While a galvanic battery is in operation, there is a constant displacement of the particles of the two metals acted on by the acid, and a gradual translation of one from its own into *another* trough, and a deposition of its particles upon substances in the connection. This is the familiar operation known as *galvanizing*. So, also, while that powerful galvanic battery, the brain and nerves, is evolving huge quantities of the subtle fluid which is capable of so many wondrous effects, we may fancy a degree of displacement of the iron in the hair that might in the course of a night result in the removal of no inconsiderable portion of it.—“But are the conditions observed? Is the circuit complete?” In reply to this fancied objection, I may say, that we do not

know what the conditions truly are. Perhaps the action does not depend on a "circuit," in the usual sense, any more than does the operation of telegraphy. It has been said that ores of iron "grow." If this be true, how do they grow?

If we observe that the influence of the mind over the body is in everyday life far more plainly manifest in the organization of some persons than of others—rendering the motions of the former quick and graceful, while those of the latter are dilatory and awkward,—so it is but natural to expect that the supremacy of the mind, in those moments of tremendous commotion which we have been considering, would be more vividly and preternaturally exhibited in cases of the former than of the latter rank: and that this is generally the case I have no doubt at all.* When the simple operation of a foreboding and temporarily morbid mind can encourage the attacks of disease, and actually terminate life at the very moment fixed upon long before, what may we not believe to be possible when the electric power of such a mind, so manifestly the king of the body, is strengthened a hundred or a thousand fold by the presence of appalling danger or overwhelming grief and despair!

I deem it unnecessary to pursue this subject further. I am not prepared to strengthen my theory at all points, with the results of actual experiment: perhaps this is forever impossible; but I think I can put it forward as the nearest approach to a rational and satisfactory solution of a great mystery that has thus far been offered.

To conclude this branch of my subject, I may mention the singular fact, that while emotions of excessive joy or mirthfulness might be thought as powerful as those of the opposite description—a position strength-

* A glance at the characteristics of the persons whose cases I have mentioned will tend to confirm this view.

enced by the fact that many have died from their effects,—no cases of alteration of the color of the hair from that cause have ever occurred.

Paralytical Causes.

It is well known that one of the effects of a stroke of paralysis may be the sudden blanching of all the hair on the affected side. This change, so total and irremediable, refers *exclusively* to that side, and includes even the eyebrows and eyelashes; the hairs of the other side remaining in their normal state. As paralysis is principally an affection of the nerves, and as it is well known on what nervous force depends, I find, in these cases, strong confirmation of the theory advanced in the preceding section. Through some suddenly-produced organic affection, the nerves of one side of the body are no longer the convenient medium for the transmission of vital electricity, on which their face depends; an extraordinary surplus of that fluid, occasioned by overwork of the brain, or some sudden and surprising shock, has deadened them at once, and its power for mischief has even reached the hair.

I have myself known two instances of this kind. One was that of Stephen Manchester, a lad with a fine and beautiful organization, who was so unfortunate as to receive a paralytic stroke, at the early age of twelve or thereabout. I examined his head in December (the 10th), 1853, and found it to present a very singular appearance. The original color had been dark chestnut; and the whole of the hair, on one side of a straight line running from the crown forward and backward, was still of that color; but all the hair on the other side, including the eyebrow and lashes, was completely blanched. The other case was that of a lady of Portland, Maine,—a member of one of the first families of that beautiful city. It was similar in character to the

one just mentioned, and therefore needs no particular description.

Grayness produced by paralysis is incurable so long as the paralysis exists.

Premature Causes. (Poliosis.)

The hair is frequently made prematurely gray through the presence of lime in the secretions, which, from a variety of causes (as was shown in a preceding chapter), may accumulate beneath the surface of the skin. The nature of the substance so accumulated is such that the adjacent tissues are inflamed by it and eventually, with their apparatus, become more or less debilitated. The organs which produce the hair are involved in the injurious action; depraved in function, they take up, with the proper elements of nutrition, a portion of the lime which is forced upon them by the surrounding repressed secretion.*

Though it would be difficult to demonstrate the absolute truth of this theory, I think it as plausible as any other which may be advanced; and I may observe that it is sensibly fortified by the fact that the treatment which I base upon it is uniformly successful.

There is a marked difference between the symptoms of Premature and Constitutional grayness. While in the latter the scalp appears to be comparatively healthy, and one may search in vain for any prominent sign of local derangement, in the former it is quickly apparent that the disorder is mainly if not wholly of a local character. The usual signs of cuticular debilitation

* That lime may be largely present in the secretions of this region, is evident from the fact mentioned by W. C. Dendy, a distinguished English surgeon, that the substance of the crusts in Porrigo (termed by him *Crustula farosa*) is principally composed of phosphate of lime. When we consider that this disease originates in the hair-follicles, we shall perceive the significance of this remark.

present themselves, and, in most cases, we find a thick yellowish fluid oozing to the surface, where it generally concretes into a crust or pellicle, so firm that it is removed with difficulty. If, however, this be done, the cleansed surface is promptly covered with a new deposit. The peculiar fluid thus constantly exuding from the pores, is a suppressed perspiratory secretion, inspissated through long confinement, and—being gradually increased in volume by fresh accessions—slowly forcing its way to the surface. In the condition which gives rise to the phenomenon of premature grayness, there is often, doubtless, an increase of production in the *sebaceous* glands; and their secretion, mingling with that of the sudoriparous glands, imparts to the latter the tendency above mentioned, to solidify in pellicles and crusts, rather than to form the light particles of dandruff, or the scales of loose seurf, which we observe in other forms of cuticular debilitation. In the disease termed “*Stearrhœa*” (see Chapter XXI.),—consisting in a derangement of the organs which secrete the sebaceous fluid,—there is an extraordinary production of the sebaceous substance, which frequently exhibits a tendency to form incrustations, sometimes of remarkable thickness and solidity. If, therefore, stearrhœa should supervene, during a suppression and slow discharge of the sudoriparous secretion, the manifestations would be apt to assume the character which we observe in cases of premature grayness.

While this appellation is manifestly suited to youthful subjects (though *constitutional* grayness is also incident to young persons), it is very frequently appropriate to the case of such as are at the middle age, or even beyond it. Indeed, in my own practice the middle-aged present even more instances of premature grayness than the young. A moment's reflection upon the

nature of the disorder—which is a symptom of cuticular debilitation—will suggest the reason of this.

Constitutional and Premature grayness may exist at the same time. Indeed, both with the young and the old, this is oftener the case than might at first be supposed. Many, who from the former alone would not have become generally gray in many years, suffer greatly from the latter, which may aggravate the original constitutional grayness.

Authorities are somewhat at variance in relation to the causes of canities, but the principal writers concur in the opinion that it is a constitutional affection. Dr. Copland considers it, with other changes in the hair, to be in general the result of constitutional debility, arising from disorder of the digestive organs, and regards premature canities as a consequence of prolonged depression of the spirits, or extreme mental activity, or hereditary predisposition, or other causes of a kindred nature, or else of some local disease. Dr. Neligan is of the opinion that loss of color of the hair is very rarely associated with debility of the vital powers. This is evident, he observes, “from the fact of its being so seldom witnessed in those who die young of consumptive or other lingering diseases.”* He gives great prominence to hereditary predisposition, as a radical cause, and makes no allusion to any local disorder, in connection with it,—considering that treatment is of no avail, except in those rare cases of vital debility which point to constitutional remedies.—We nowhere find a clear system of philosophy on this subject. *Premature canities*, according with the description I have given, has no definite existence in a diagnosis, and its existence is left to conjecture. The nearest approach to a true notion of this variety is contained in Dr. Copland’s

* See Chapter XV.

brief paragraph relating to the treatment of canities in general. After remarking that, "when canities is the result of age, and of partial or general leucopathia,* it cannot be made the subject of medical treatment," he makes an exception in respect to cases which "depend upon chronic inflammation of the scalp having extended to the bulbs of the hairs."

TREATMENT.

Though "Constitutional" grayness, as described in the foregoing pages, must be declared in general terms incurable, I am of the opinion that the rare variety alluded to by Dr. Neligan, as being clearly associated with "debility of the vital powers," is sometimes susceptible of partial alleviation in the mode prescribed by him. "In it," he remarks, "the indications are manifestly to restore the system to a state of robust health, if practicable, by the use of such remedies as may be appropriate for the individual case." In regard to those local applications and other means which "have been, and still are recommended," he continues, "with the view of preventing the hair from turning gray: should it be dry and crisp, and the surface of the scalp appear bloodless, any gentle, stimulating pomade may be used; cutting the hair short, or removing it altogether by shaving the scalp, occasionally proves useful." Whether a stimulating application be necessary in a given case, may be a nice question; and furthermore, though the condition of the scalp, and of the hair, may be benefitted, it does not follow that *grayness* will be thus prevented, especially *constitutional* grayness,—which will probably be unaffected by such a course of treatment. As for cutting or altogether removing the hair, my experience teaches me that it is of no avail whatever,—

* See Chapter XV., under head of "Vitiligo."

except, perhaps, now and then, incidentally, in consequence of the increased facilities thus afforded for keeping the scalp clean. But *premature* grayness, as defined by me—since this variety is not necessarily connected with general debility, or any positive declension of functional power elsewhere than in the region which supports the hair,—is prevented or arrested by any means which is capable of restoring and maintaining the functional energy of the scalp.

From the nature of the disorder in question, it is apparent that the most we may justly anticipate, from even a perfect means of this sort, is, that further change or loss of color (in the hair already produced) will be prevented, that the new hair will exhibit the original shade, and, finally, that the hair which has lost its color *may* ultimately regain it, wholly or in part, through a gradual process of absorption and substitution in the material of the strand. A practitioner who should promise more than this, through the use of whatever compound, would deserve to be looked on with distrust.

The remedies mentioned below scarcely ever fail to arrest the progress of canities, and often are so fortunate as eventually to completely restore the lost color.

The first recourse should be to the prescription given in the last chapter for “*Debilitation of the Cuticle.*” Should the effect, within a reasonable time, be slight, the remedy may be changed for the one given, in the same chapter, for “*Suppressed Secretion;*” each to be used as directed for its own disorder. Should the effect of this remedy also be unsatisfactory, let a strong tincture of green walnut leaves be applied several times in a day. Failing in this, the patient may conclude that nothing more can be done.



ALOPECIA.

Calvities. Area calvosa.

CHAPTER XV.

ALOPECIA, OR FALLING OF THE HAIR.

“ALOPECIA” is perhaps the most ancient of the numerous terms which have been applied by medical writers to the condition of baldness. It formerly referred also to the falling out of the hair, and to the supposed disease of which that loss was the index. The *fox* was said to be subject to this disorder: hence the title, which is from the Greek, *αλωπηξ*, “a fox.” Willan applied the term *Porrigo decalvans* to cases of *partial* baldness, as in many instances the denuded patches were circular in form, and thus suggested the presence of ringworm, a porriginous disorder—the latter half of the phrase being derived from the Latin, *calvus*, “bald,” or the French, *calvitie*.* *Calvities*, from the same, is another title of baldness, particularly of the crown. Among other terms may be distinguished, *Depilis capititis*, *Capillorum depluvium*, *Trichosis athrix*, *Lipotrichia*, *Pelada*, etc. Sometimes Alopecia is congenital; it is then denominated *Atrichia*, seu *Alopecia adnata*. The baldness of old age is termed *Alopecia senilis*.

Alopecia, the most venerable, is perhaps also the most desirable term that has been mentioned, since it may apply to the falling of the hair from any part of the body, while the others refer more particularly to that which occurs on the head. A variety of minor appellations have been employed to designate peculiar phases of the phenomenon in question. Thus, when the hair is observed to fall from all parts in about the same degree, producing a general thinness, the phrase *flexus capillorum* is used;

* The depilated parts, in *P. decalvans*, are smooth, white, and shining: some declare them to be invariably depressed.

where parts of the surface are entirely deprived of hair, the rest remaining unaffected, we have the condition named *Arcæ* by Celsus; by Sauvages, *Alopecia areata*; and by Willan, *Porrigo decalvans*.* Where the disorder is universal, and no hairs are left on any part of the body, the French writers have styled it *La Pelade*, which term has by some been thought to refer also to a desquamation of the cuticle.

Cases have occurred in which the body has in a few days been deprived of all its hairs; in other instances the deprivation proceeds so slowly as to be almost imperceptible. In these cases, whether the hairs fall slowly or rapidly, the skin usually presents a natural appearance, and no unusual sensation is felt; at times, however, it is of a dead white color, and more or less furfuraceous; in other instances it is, perhaps, covered with a scaly scurf, the underlying skin exhibiting an erythematic or morbid redness. These abnormal phenomena may indicate a mild form of Psoriasis—what some dermatologists would perhaps style *general pityriasis*.† They are sometimes accompanied by more or less pruritus, or by a sensation of pungent heat: symptoms which tend to strengthen the above theory.

The hairs, in alopecia, frequently seem themselves diseased, being dry, faded, brittle, and generally lifeless. When they appear as healthy as before the attack, it is obvious to infer the presence of some disorder of a different character from those which produce the contrary effect.

Various well-known cutaneous diseases, as a perusal of the following pages will show, are attended with a shedding of the hair from the parts affected. The loss in some of these is permanent, but only temporary in others; and in several it is either final or temporary,

* See note on previous page.

† See chapter on "Lepra and Psoriasis."

according to the violence or the inveteracy of the attack. But these losses are not such as come under the head of Alopecia,—in which the shedding of the hair is the main or only symptom; in those diseases the loss of hair takes a minor place in the diagnosis, and indeed may often be of no particular consequence in deciding the course of treatment.

Alopecia is not entitled to the name of a *disease*; it is simply a state, or a phenomenon, or a symptom. M. Alibert, a justly celebrated French dermatologist, treats it, however, as a disease,—placing it in the second class of his “*Dermatoses Teigneuses*,” under the appellation of “*La Porrigine tonsurante*.” Under the head of “Porrigo,” in the present work, the reader will find reasons for disagreeing with M. Alibert, who extends this term greatly beyond the limits assigned it by modern philosophic writers on cutaneous diseases, and has constructed a number of varieties of porrigo out of rather inadequate materials. Alopecia may be occasioned by disease, or may be simply a consequence of the atrophy of the deeper tissues: an accompaniment of old age,—the gradual absorption of substance not essential to the continuation of life, in order to the economy of the vital forces. The wasting of the tissues in which the bulbs of the hair are seated, necessarily involves the destruction of the hair. Atrophy of the scalp, though a sign of age, may occur, at least to some extent, with those who are comparatively young in years. But there is really no difference in the cases; for since old age is simply a waning of the powers of life, it is not unreasonable to consider many old who are not even arrived at the middle age. The hairs once lost, from the above cause, it is plain that not even rejuvenescence—were that possible—could be expected to restore them.

Loss of hair is frequently a result of fevers. This is

probably to be traced to the debility and constitutional exhaustion which they occasion. The follicles, however, generally remain uninjured, and new hairs eventually take the place of the old. Alopecia in these cases is discriminated as "Secondary and Symptomatic." It is "Local and Consecutive," when it results (as in porigo) from injury to the follicles occasioned by inflammation, ulceration, or other morbid process in the adjacent textures. It may also be "Local and Idiopathic," as when the follicles are injured by pressure, friction, heat of the sun, the fumes of quicksilver, etc. It is also a result of long continued headaches, the continued influence of the depressing passions, protracted hard study, etc., etc. M. le Chevalier d'Epernay, after four months of assiduous application to study, though no other symptoms of disease appeared, lost all the hairs of both head and body, including beard, eyelashes, and eyebrows. Ravator relates the case of a person who, after a violent commotion of the faculties, "was attacked with amaurosis of the right eye, and all the hairs of the same side lost their color, and fell from the eyebrows and eyelashes as well as from the head." Singular cases are on record in which the affection is apparently purely "Sympathetic"—referring in no way to a constitutional disease, or even to any visible cutaneous disorder. Thus, in the winter of 1825–26, a Piedmontese named Lodovico Greusmier, fifty-seven years of age, of vivacious temper, plethoric habit, though spare form, skin a dull white, began to be troubled with severe pains in the head, accompanied by a feeling of burning heat in every part of the body, particularly, however, in the skin; and that this was no mere fancy, is proved by the fact that the bed-clothes were insupportable during even the coldest winter nights. After the lapse of fifteen days, during which these painful symptoms continued, the hairs of his head began to fall, and their

destruction was followed by that of the beard, the eyebrows, the eyelashes, and finally the hairs of the body, so that in a month every hair was gone. The history of this ease, in order to be of service to the medical profession, would need to be very much fuller. It would be interesting, moreover, to learn whether the unfortunate Piedmontese eventually reeovered his hair; for the possibility is not too extravagant, as will be seen from a case, reeorded by Lemery, of a man whose hair rapidly fell, first from the head, and then from the body, until none was left in any part. The loss had been preeeded, several months before, by excessive *catharsis*. No trace of a hair could be detected, and the skin was "as smooth as polished marble." Not a hair reappeared for two years; but during the whole of that period a "pungent, aerid heat" possessed the surface, more especially the sealp, which "was always morbidly sensible, and painful to the toueh." In March of the second year he had inflammation of the lungs; and, while he was under treatment for that malady, hairs began to appear (it is not stated whether the appearance was general), and eontinued to grow during his eonvalescence and afterward. "On their first appearance," says the narrator, "they resembled fine soft wool, almost colorless wool; but they eontinued every day to approach nearer to their natural charaeter, whielh they had fully recovered at the end of a month." M. Lemery, or the one who originally quotes him (for I do not obtain the statement at first hand), seems particularly struck with the circumstance that the hair should have been reproduced while the circulation was so mueh weaker than usual, and the general tone of the system temporarily depressed so far below its customary level. But it is well known that consumptive persons often have luxuriant hair; the remark is common that their "strength has gone into their hair." It is barely possible that the

medicines employed to subdue the inflammation, in the case above noticed, may have had the unlooked-for virtue to revivify the follicles, or in some way spur forward the vital processes on which the formation of the hair depends; but I am inclined to think a better solution of the problem may lie in a theory of Vauquelin and Fourcroy, to the effect that the hair is to a large extent capable of fulfilling the office of the kidneys. From this fact, if true, it may not be unreasonable to infer that when the functions of the lungs are but imperfectly performed, the hair, greatly extended in length, and its porosity increased, may in some way be taken into the service of the system, for the purpose of eliminating from it various effete products, or of effecting certain changes, or, perhaps, of increasing the stock of vital electricity on which those changes to some extent depend. At any rate I do not think the apparently flourishing condition of the hair, in many cases of consumption, necessarily weakens the general proposition that the health of the hair depends greatly on that of the body, and upon the vigor of the circulation and cleanliness of the scalp. Before this proposition can be essentially affected, it will be necessary to prove that the condition of the hair, in consumptives, is absolutely normal; and this might prove a difficult task.*

Certain kinds of food, used exclusively or to excess, are said to occasion alopecia; more particularly, fish.

* It may be observed, that when the lungs are extensively diseased, those impurities of the system that had before been eliminated through the pores of the skin seem to determine to the affected organ. Diseases of the skin are hence rare in consumption. Besides, as the determination to the surface is in this disease so greatly diminished, inflammations of the integuments of the scalp are more rare, and thus the hair may temporarily benefit from a condition which is finally so fatal to the general system. These considerations, taken in connection with the foregoing, may contribute something toward the solution of the mystery to which I have alluded.

It is, perhaps, a question whether the loss of hair in these cases may not be referable as well to some other cause : as, for instance, climate. Thus, it has been mentioned as a curious fact, that baldness is more common in Brighton than in almost any other place in England. As it is not to be supposed that the people of Brighton indulge in any extraordinary peculiarity of diet, we must look for some other solution of the problem. It will be seen, in that part of the chapter on Porrido relating to *Plica*, that that disease has often been attributed to the use of *semi-putrid fish*. Where fish are commonly eaten, it may chance that now and then some may be consumed that are more or less tainted ; and if the above theory be accepted, it would be natural in that region to look for cases of some porriginous disorder. Now, in the instance of those people of Mycone and the Shetland Islands who are said to lose their hair through the use of fish, I do not find it asserted that this loss is spontaneous, or, in other words, that it is neither preceded nor accompanied by disease of the scalp or constitutional disorder.* It may be preceded or accompanied, more or less frequently, by a disease (if we may so characterize it) termed of late

VITILIGO,†

Or Leucopathia—the *Achroma vitiligo* of Alibert,—which, though it bears a kind of relation to the porriginous disease named “Ringworm,” is yet so mild and undemonstrative as perhaps to be regarded, in most

* Perhaps the secret of alopecia, in those habituated to a fish diet, is merely deficient nourishment. The virtues of this article of food being quickly spent, there are long intervals of toil in which the vital forces are rapidly drained, and they are not afterward restored with a corresponding promptness.

† This term is thought, by Bateman, to be from *Vituli*, the flesh of calves, which the affected portions resemble.

cases, with complete indifference. It might (in fanciful language) be termed a kind of *ghostly Ringworm*. It consists in a deficiency, or generally a total absence, of coloring matter, in portions or the whole of the skin, and is sometimes congenital, though it far oftener (when partial) is developed in middle life or old age. When it is total and congenital, it is styled *Albinoismus*. The curious creatures termed "Albinoes" afford instances of Albinoismus. It, of course, cannot be called a disease, and is probably a different affection from vitiligo*. The disease usually appears in the form of small rounded—often nearly circular—white patches, occurring more commonly on the chest, the scalp, or the back. The patches or spots may be few or many, grouped together or dispersed in various quarters. They gradually increase in dimensions, at the same time losing their regularity of shape, and not infrequently attain the size of the palm. Save in color, the affected tracts do not seem in any way changed. They are sometimes dull, but as often bright and glistening. The disease would seem to affect dark-haired oftener than light-haired persons, and to be partial to the scalp in women, and to other parts of the surface in men. Whatever region is attacked, the hair growing upon it, if there be any, also becomes white, and in many cases eventually falls from the whole surface of the affected part. "When the hair is thus affected," says Dr. Neligan, "attention is at first usually attracted to it by a single lock of the hair, generally on the back part of the head or the

* As for "true *Vitiligo*," I am not positive that the title is not meaningless. Wilson is positive that partial leucopathia and vitiligo "bear no relation to each other whatever." Vitiligo, in his opinion (taking the idea of the disease from Bateman's description), is really *Lupus non exedens*. (See chapter on Acne.) His description of partial leucopathia corresponds very well with the account I give of vitiligo, which is derived in good part from the work of Dr. Neligan. Dunglison terms this affection "*Lepra alphoides*."

temples, turning white; this gradually becomes larger, and at length the hairs which have lost their color fall out, and one of the forms of Alopecia, or what has been termed a variety of *Porrigo decalvans*, is thus constituted."

Those cutaneous affections which are chiefly characterized by discoloration of the skin are assembled by Wilson under the head of "Disorders of the Chromogenous Function of the Derma," a group corresponding with the order "Maculæ" of Willan. The order is subdivided by the former into three principal groups, namely: "1. Those [maculæ or "spots"] which are characterized by *Augmentation* of the natural pigment of the rete mucosum; 2. Those in which there is *Diminution* of pigment; and, 3. Those which present a morbid alteration of pigment." To these he desires to add a fourth group, termed "*Chemical coloration* of the skin," for the purpose of including the alteration of the color of the skin occasioned by the prolonged medicinal use of nitrate of silver. It will be observed that vitiligo (or, perhaps, properly *Leucopathia*) falls under the second of these four heads. The vitiligo of Neligan is the first of the two genera which comprise his order "Maeulæ" (after Willan); the second being termed "Ephelis," of which see further in the chapter entitled "Chloasma." The proposed fourth genera of Wilson (see above) is by Neligan styled "Ephelis *violetacea*."

I have nothing further to observe, in this place, on the general subject of Alopecia. Much more, however, will be found in one part or another of this work in relation to particular causes of the phenomenon, which, as I have before remarked, is a symptom of numerous cutaneous and general affections. (See chapter on "Pityriasis.")

TREATMENT.

A careful study of the foregoing pages will serve to convince the reader that any *specific* offered for falling of the hair must fail in many cases, and can have been planned only in dense ignorance of the scientific facts underlying the phenomena in question. Alopecia is a *symptom*,—not of one disease alone, but of many. The remedies appropriate to the disorder which has occasioned the loss of hair, are those which, as a general thing, must be depended on to restore the hair or at least prevent a further loss. On the subsidence of the governing affection, the hair usually begins to reappear, if the disease have not continued inordinately long—too nearly exhausting the vitality of the system or fatally injuring the structure which produces and sustains the hair. Thus, after fevers, the hair which may have fallen is commonly reproduced, through the unaided efforts of nature; so, also, after attacks of what is usually termed Porrigo, though the scalp may have been deprived of large portions of its capillary covering, the hair promptly reappears, unless the attack have been so violent or so protracted as to have destroyed or greatly injured the apparatus on which its growth depends. Much of the repute which may attach to certain “Restoratives” is partly or altogether owing to the fortunate conjunction, as in cases like the above, of natural and artificial agencies,—the latter doubtless often really hindering instead of furthering the success of the former.

When the hair is dry, faded, brittle, and apparently lifeless, falling readily, great debilitation of the cuticle is indicated, and the remedy is the one prescribed, in the last chapter, for the latter condition.

When the hair, though comparatively healthy, manifests no particular attachment to the surface, but falls from time to time, in the operation of brushing, and is

not promptly reproduced, a suppression of perspiratory secretion is indicated, together (in many instances) with more or less debilitation of the cuticle; and the remedy is that which, in the previous chapter, is prescribed for suppressed secretion: alternating it with the latter remedy, in cases which do not promptly yield to the other.

The reader is here properly reminded of the observations in this chapter relating to the loss of hair from atrophy or wasting of the deeper tissues, in which the hair-bulb is usually implanted. This kind of alopecia is very like the one last mentioned, so far as concerns the visible symptoms; but, unlike that form, it is unaffected by topical remedies (except now and then receiving an apparent temporary benefit from them), and must be treated promptly and perseveringly, with those internal remedies which are in best repute for arresting the decay and wasting of the system, and restoring the tone of the secreting organs.

A partial loss of hair on the scalp, occurring usually in patches, and termed by Willan *Porrigo decalvans*, is classed by Dr. Neligan under the head of *Vitiligo*,—a disease I have already described. It may occur on any part of the body covered with hair. In the description given by Dr. N., the hairs growing on the affected spot become white before falling out. This, however, is not always the case with hair which is shed from a circumscribed area of the scalp, for it may fall without exhibiting the least change in color. It is scarcely worth while to make a corresponding distinction in the treatment proper to these cases, notwithstanding this indication of an apparent difference in their nature.

Dr. Neligan employs the usual constitutional remedies, in vitiligo,—aiming to “restore a healthy tone and vigor to the system;” of these, “preparations of iron, or of bark combined with iodine, cod-liver oil in

scrofulous habits, cold salt-water bathing, general or local, in the form of the shower-bath or the douche, and above all, mental quietude, are the most essential." His main reliance, however, is upon topical applications,—principally those of a stimulating nature: of these, he gives especial prominence to the Tannic Acid Ointment, compounded as follows:—

B. Acidi Tannici.....	gr. xl.
Adipis præparati.....	ʒj.
Glycerinæ.....	fl 3ss.
Olei Rosmarini.....	m. viij. Misce.

"A portion of this ointment should be rubbed forcibly into the parts affected, three times a day, the surface having, previously to each application, been washed well with a saturated solution of common salt in water."

In very chronic or obstinate cases, he favors the use of blisters, or of tinct. canth., made into an unguent. After speaking favorably of various preparations of sulphur,* in exceptional cases, he strongly commends the oil of turpentine, made into a pomade as follows:—

B. Olei Terebinthinae.....	fl 3ij.
Sevi.....	ʒij.
Balsam Tolutani.....	3ij.
Simul liquefac lento igne, dein adde,	
Olei Rosmarini.....	m. xx.
Olei Amygdalæ Amaræ.....	m. v.

"A small portion of this pomade should be rubbed into the affected spots twice or three times a day, with a piece of flannel, the part having been previously well washed with an alkaline wash—a drachm of carbonate of potash to eight ounces of distilled water."

In W. C. Dendy's "Portraits of the Diseases of the Scalp,"† a work of much ability, and valuable for the unusual accuracy of its drawings, we find an illustration of calvities, there termed "Area Calvosa," with a large number of synonyms, among which is *Porrigo decalvans*.

* In the form of lotion or ointment.

† London, 1849.

Mr. Dendy observes that “the malady consists of bare or denuded patches of the scalp, *which retains its natural, or healthy hue*; usually circular, or abruptly defined, often coalescing and depilating the whole surface of the hairy scalp.”

This author declares that “the crop of hair may be sometimes renewed, but even then it is invariably silky or downy.”†

“The scalp is usually bare and shining: in some cases, however, the skin is dry, and slightly *granular*; in others, filmy epithelial flakes may be detached,—a condition which may be at first mistaken for ringworm. Some of the heads thus affected *have been of too high a temperature from birth*.

“As this condition indicates systemic debility, tonics should invariably be administered, selected according to circumstances.”

The following are given by Mr. Dendy, as the most efficacious of those remedies which are “excitant or nutrient of the hair-bulb:”—

Melted Beef-marrow.....	3x.
Almond Oil.....	3ij.
Red Bark.....	3j.

Mix the bark “first with the oil, then with the marrow.”

Balsam. Peruvian.....	3ij.
Ol. roris marin.....	gtt. xx.
Ungt. cetacei.....	3iss.
Cer. alb.....	3ss.

“These to be mingled over a fire.”

Creosote.....	3ij.
Ungt. cetacei.....	3ij. Misce.
Iodide of sulphur.	

† As this writer's expressions are apt to be obscure or ambiguous, I think it possible he here refers merely to a renewal through the unaided efforts of nature.

It is often found, upon a careful examination of the patches whence the hair is detached more readily than from the general surface of the scalp, that the skin has a paler appearance than is natural in health, and is more or less depressed below the general level: indicating atrophy of the underlying tissues, and a consequent diminution of vitality in the scalp of that region, with deterioration of the apparatus which is designed to propagate the hair. It is plain that but little can reasonably be hoped from the use of topical remedies, in cases of this description. The treatment—not very sanguine at best—which gives us the fairest chance of success, is that which braces and strengthens the system, and thus augments its vitality. By a careful attention to diet,—choosing only those articles of food which are found to best agree with the patient, and are most readily assimilated, the wasting of the tissues may, perhaps, be arrested, even though it may be vain to hope for a reparation of the injury already done. The head should be kept cool, the feet warm, excitement avoided, tonic and strengthening remedies judiciously employed, and some gently stimulating lotion or unguent may be applied to the affected parts, the recipe being selected from the large number given in the foregoing pages.

In cases where the scalp of the affected part presents no unusual appearance, and no wasting is apparent, let the remedy prescribed in the preceding chapter, for Suppressed Secretion, be faithfully employed. Should the scalp appear shrivelled and lifeless, though not depressed below the general level, the remedy for Debilitation of the Cuticle may be used in preference. In both these cases, indications of low vitality, bad digestion, etc., should not be neglected.

“When the hair falls off in patches,” says Mr. Plumbe, “in children and young people, it often grows again, in time, as strong as ever; but I do not believe this can be

brought about," he adds, " or at all expedited, by any artificial means." In this passage, judging from the context, Mr. Plumbe refers particularly to *porrigo decalvans*, in which variety of alopecia the denuded spots appear white, shining, and (according to some writers) depressed below the general level. It is probable that the cases of hair being reproduced spontaneously, and growing again as strong as ever, were of a different sort.

For the amusement of the reader, I will conclude with a brief passage touching the former method of practice in cases of alopecia. I do not now remember its source :—

" Phlebotomy seems to have been the most favorite mode of healing this terrible disease, either by local depletion, as leeches, scarifications, and acupuncture, or by venesection. Simple local means, in some cases, may have succeeded better,—as friction, no matter whether with the fat of the mole, or the snake, or the hedgehog, or the bear, or with warm, exciting substances, as camphor, turpentine, naptha, laudanum,—with volatile oils, as those of laurel, rosemary, mace, or cinnamon, or with the distilled water of beeswax,—with acrid substances, as thapria, euphorbium, stavesaere, nasturtium, mustard-seed, garlie, onions, and the tincture of tobacco ; with irritating applications, as friction with fig-leaves, nettles, tincture of cantharides, and even the application of a blister. Some physicians have resorted to alkaline ingredients,—which explains the use of the lixiviae of wood-ashes, burnt cane, burnt hair of bears. The bile of different animals has been resorted to,—astringent applications, as alum, lead, green vitriol. But whatever the form of the disease, or the nature of the treatment, the frequent shaving of the diseased parts has been, in all ages, the most favorite mode of treatment, and recommended by all writers."

CHAPTER XVI.

PITYRIASIS.—DANDRUFF.

VARIOUS definitions of Pityriasis have been given, that afford a pretty wide field to the controversial nosologist but are somewhat perplexing to the simple seeker of truth. For my own part, observing how nearly the several accounts approach on the one hand to the received views of Psoriasis or Lepra, and on the other to those of *Teigne furfuracée* or *T. amiantacée* and occasionally still other comparatively well-defined disorders, I have been led to ask whether there be really any such disease as Pityriasis. It cannot be denied, that certain cutaneous affections which exhibit, or consist in, a derangement of the vessels of the cutis that secrete the cuticle, are intimately related, and may even be regarded as *modifications* depending on the texture of the integuments and the state and history of the system. Thus, one may be the result of extreme debility and slight local inflammation. In such a case the formation of the cuticle would proceed but slowly, and it might exhibit some of the characteristics of an inert substance. Various abnormal constituents might at length be found in it. If we may suppose that one of these were a small proportion of some mineral, such as lime, with a minute quantity of an albuminous substance, a moderately active state of the producing vessels would exhibit a product perhaps resembling the small shining silvery scales of *teigne amiantacée*.*

* See chapter entitled "Porrigo."



PITYRIASIS.

Dandruff. *Crustula furfurosa*.

With a little more irritability of skin, and a slight inflammation of the sebiparous glands, we might have the *T. furfuracée*, or porrigo *furfurans*. A bad state of the system, in conjunction with a full habit, would probably eventually resolve this disorder into *P. favosa*, the cuticular desquamation soon becoming a secondary feature. With a scrofulous tendency in the constitution, and a seated dull inflammation of the cutis that should produce hypertrophy, and result in the elevation of the overlying cuticle, we would look for some variety of lepra* or psoriasis, the description depending in some measure on the original nature of the cuticle, the degree of the subcutaneous inflammation, or some similar circumstance more or less controlling. Who can tell us why, admitting the essential identity of lepra and psoriasis, the eruption sometimes assumes the circular form associated with our ideas of the former, and in other instances presents no determinate shape, or on other occasions exhibits on this part of the surface a ring, and on that an irregular patch? The wisest can but connect these eccentricities of manifestation in disease with supposititious peculiarities in the structure of the integuments, parts or tracts of which may chance to be found by the disease in a less vigorous state than the remainder, or to present an imperfection or deterioration of structure. Since the philosophic mode of treatment of these various disorders embraces essentially an elevation of the tone of the system, and a subduing of the local inflammation, I think it can hardly be deemed desirable to multiply nosological titles based on small and unimportant peculiarities of symptom, and thus manufacture new diseases from materials which still belong vitally to the old. Even the mode of treatment prescribed in the new disorder—differing so slightly, if

* See chapter on "Lepra and Psoriasis."

at all, from that which has been found successful with the old and familiar disease—is sufficient to stamp the new creation with the seal of vanity and meddlesome presumption.

The word *Pityriasis* is from the Greek *πιτυρων*, “elaff,” or “bran.” It refers exclusively to the branny scales or particles which characterize the disease. These are commonly known under the name of “Dandruff.” The latter term seems to be a modification of “dandriff,” which was formerly applied by nurses to a scurfy desquamation or accumulation on the head of infants.

In the chapter on “Debilitation of the Cuticle, and the resulting affections,” is indicated the principal source of scurf and dandruff, viz.: inspissate sudoriparous secretion. I do not maintain that they should be attributed solely to this cause; for it is undoubtedly true that they are in some cases derived partially, or perhaps even wholly, from a desquamation or exfoliation, or in common phrase, *casting off*, of the outer portions of the cuticle: a process which, while it is to a limited degree natural upon the entire cutaneous surface, is sometimes rendered unnaturally active, on the scalp, by various causes,—such as the constant irritation and abrasion to which so many subject that surface by the industrious use of hard brushes and sharp-toothed combs. This cuticular desquamation, in fact, is the only cause which is usually assigned, by dermatological writers, for scurf and dandruff. But that it is not the only, nor even the principal cause, I think is plain from what I have elsewhere said in regard to the secretions. Indeed, the quantity of matter which accumulates on the surface of the scalp, or is daily removed from it, is in many instances so large, that to attribute it entirely to desquamation of the cuticle would, to my apprehension, involve a physical impossibility, or at least a very grave improbability. An examination of the substance

assumed to have been exfoliated and therefore to be genuine cuticle in a state of disintegration, also tends to prove the fallacy of this very general theory, as also does the uniform success of a system of treatment based upon other principles.

In accordance with the views expressed in the foregoing paragraph, I am of the opinion that whenever the accumulation on the head of infants is distinctly composed of cuticular exfoliations in the form of scales, the disorder should be termed *Psoriasis capititis*;* and that the scurfy deposits which are commonly observed in these cases do not, in a large degree, consist in desquamations of the cuticle, but of inspissated secretion from the sudoriparous, and occasionally, also, the sebaceous glands. That the nature of these accretions has not been carefully investigated by previous writers, I think is susceptible of demonstration. "The *P. capititis* (as it has been designated by Willan and Bateman), or dandriff of infants," says Mr. Plumbe,† "is usually not of a very important nature. If the child who is the subject of it be not very much neglected in point of cleanliness, it usually disappears in a few weeks; but now and then, under different circumstances, it is followed by considerable irritation, fluid secretion, and scabbing, or a state much resembling the *Porrigo furfurans*. Under circumstances of peculiar aggravation, indeed, there is no real difference between the two affections." The foregoing extract may serve to illustrate the assertion immediately preceding it. It is a marvel

* See chapter on "Lepra and Psoriasis."

† See "A Practical Treatise on Diseases of the Skin," etc., etc., by Samuel Plumbe, "late senior surgeon to the Royal Metropolitan Infirmary for Children," etc.; fourth edition, with illustrations: London, 1837: page 242. The reader will find, in the present work, frequent allusions to this Treatise, and its ingenious author, whose views are often as striking as they are original and conscientious.

that a writer whose observations are usually so distinguished by real acumen should not have been struck with the circumstance which he relates. The variety of pityriasis which affects the adult subject, as described by the same author, would serve an excellent purpose, as illustrating a mild form of *teigne furfuracée*. It seems absurd to call the moist and tender particles to which he alludes, *scales*, in the sense which attaches to the word in descriptions of lepra and psoriasis. Wilson—who, in his smaller work on cutaneous diseases, employs also the title of “branny tetter,” to designate the affection—observes that, like the other dry tettters, it exhibits a “predilection for certain situations, and those, strange to say, generally the opposite to the ones selected by the other dry tettters; from which one might infer, that as all the scaly eruptions are essentially of the same nature, the difference in the characters of the branny tetter is probably referable to a difference in the nature of the skin, or of the part on which it is developed.” Why not “referable to a difference in the nature” of the *disease*? M. Rayer observes, that “the variety of *pityriasis capitis*, which attacks adults and the aged, and is characterized by a simple powdery exfoliation of the epidermis, and pruritus, without serous discharge, and matting of the hair, only requires attention to cleanliness, and the application, from time to time, of some soothing unguent. The severer variety, however, which occasionally occurs along with general *pityriasis*, but which may also exist alone, and is denominated *teigne amiantacée* by French writers, requires more active treatment.” In enumerating various points of distinction between pityriasis and psoriasis, the same author says that “when the inflammation runs very high in pityriasis, the skin, especially when scratched, is very apt to pour out an abundant serous secretion, whilst in psoriasis it always continues

dry. Lastly, in *acute* pityriasis the subcutaneous cellular tissue is often swollen and painful over a large extent of surface—a circumstance which never happens in psoriasis *discreta*, and which, in psoriasis *inveterata*, is only observed to occur in limited spaces. The heat and pruritus that accompany pityriasis are, moreover, much more troublesome than the same phenomena in psoriasis ; and pityriasis, when general, is much more frequently complicated with symptoms of constitutional disturbance and derangement of the functions than psoriasis." It would be difficult, indeed, to construct a new disease, answering to the title of pityriasis, from the elements to be obtained in the foregoing. I append a random extract from the same author :—"Pityriasis *labrum* is a variety that has hitherto been confounded with psoriasis, a disease, however, from which it differs in being evolved on the lips and surrounding skin, not as papular elevations, followed by thick squamæ, but under the semblance of minute red stains, to which succeed a general redness and a continual desquamation of the epithelium of the lips, and occasionally of the cuticle of the neighboring skin. The desquamation goes on in the shape of little thin and transparent laminæ, very similar to portions of the healthy epidermis dried, or of the epidermis whose inner surface has imbibed a little serum previous to its desiccation. The lips, in this state, are affected with heat and tension ; the epithelium gets yellow and thickened ; it then cracks, and falls off in laminæ of considerable size. It frequently happens that these continue to adhere for some time by their centre, when their edges are loose and already dry, so that a new epidermis is formed under the one about to be detached before it falls ; this new cuticle then grows yellow, cracks, peels off, and falls in its turn, to be succeeded by another which undergoes the same changes and shares the same fate." And yet, after all this, it

seems plain to M. Rayer that the disease he has been describing is not psoriasis, because there are no "papular elevations, followed by thick squamæ." These manifestations, on the *lips*, which are commonly supposed to be destitute of a true cuticle, would indeed be marvellous. If, before his time, the disease had been by writers in general "confounded with psoriasis," I offer myself as a champion of their intelligence and sagacity; for I am myself constrained to so confound it. Again, let us examine his remarks upon "general pityriasis." This he previously styles "one of the least frequent and most obstinate of the diseases of the skin;"—beginning with a "violent feeling of itchiness, or rather of a painful and tantalizing prickling sensation, which seems to have its seat under the skin, between it and the flesh," it proceeds to inflammation and swelling of the cutis and final desquamation of the cuticle, in lamellæ "formed by the cuticle nowise thickened." He then observes as follows:—"further, when patients have yielded to the impulse to scratch, occasioned by the violent pruritus which accompanies the disease, the parts of the skin which have recently shed their cuticle pour out a serous, yellowish-colored fluid, *similar to that observed in the moist eczemas*, and occasionally so abundant as completely to soak the linen, or other clothing with which the parts affected happen to be covered. When this adventitious circumstance occurs to such an extent," he naïvely concludes, "it is apt to render the diagnosis of pityriasis obscure." One would think so. It seems almost like fatuity to insist upon calling the disease by that name, in the face of the facts so circumstantially detailed.

Let us examine the disease termed Pityriasis, in the light of modern definition. Neligan—whose precision and conciseness it is a pleasure to note—observes, in his diagnosis of the affection, that it is "distinguished

from psoriasis by the fineness and thinness of the scales, which are not thicker than the healthy scarf-skin, even when the disease is very chronic; by their being desquamated in excessive quantity; by the parts affected being scarcely elevated above the surrounding integument; by the peculiar color of the surface of the skin on which the eruption is situated; and by the attendant pruritus." If now we assume this disorder to be a more active variety of psoriasis,* in which variety the leading peculiarity is the more than usually rapid formation of scales, every item of the above schedule may easily be reconciled with the new position. Thus, the more rapidly the scales were secreted, other things being equal, it is natural to infer that they would be the more diminutive, since the first scales would in that case be forced from their places by succeeding ones before they could have time to unite with those adjacent and form the laminal plates which constitute the larger scales of psoriasis. The partial easement of the subcutaneous inflammation perpetually effected by the chronic activity of the secreting organs, would modify that swelling and induration of the cutis which occasions the greater elevation of the surface in psoriasis; the color of the surface would naturally correspond with the other conditions of the disease, and the greater mobility of the particles upon the surface, with the sensitiveness caused by the more acute subcutaneous inflammation, would very naturally account for the more noticeable pruritus of pityriasis.

Were the same latitude permitted, in tracing the limits of legitimate psoriasis, that is assumed unhesitatingly in diagnosing several other disorders, I think it would be difficult to find a case of so-called pityriasis that could not readily be classified as active or acute

* See chapter on "Lepra and Psoriasis."

psoriasis, or porrigo *furfurans*, or teigne *amiantacée*. And those rare instances which present rebellious peculiarities are certainly paralleled in the history of a large number of diseases, not only of the skin but of the system in general.

Mr. Plumbe's description of teigne furfuracée covers many a case of pseudo pityriasis. "The T. furfuracée," he says, "begins by a slight desquamation of the cuticle of the scalp, and is often *accompanied by a considerable itching*; an ichorous matter flows at the same time from the affected surface, which *dries, and forms the scales of scurf* from which the disease is named." The grammatical construction of the foregoing is awkward, but its meaning is plain enough. He does not say that the "slight desquamation" with which the disease begins takes the form of scales,—though this is not impossible,

but it is the *ichorous matter*, exuding upon the affected surface and *drying into scurfy scales*, that gives to the disease its distinctive character. His description of the subsequent progress of T. furfuracée seems to indicate a complication with eczema,* since it corresponds with one of the numerous forms of this very common disorder. "As the disease increases by degrees," he observes, "it spreads in time over the greater part of the scalp; the layers of scurf thicken, and at this period they resemble a coating of bran or coarse flour, the under surface of which is saturated with fluid." To this he adds, in a separate paragraph, "If the scalp is carefully freed from this adhesive substance, it is found to be divested of its cuticle. It is usually of a pink color, and offers a smooth, polished, shining surface, resembling varnish."

M. Rayer's account of pityriasis *capitis* differs from

* See the following chapter.

that of Willan and Bateman.* It is announced by a considerable itching of the scalp, and is at first characterized by the profusion of minute squamæ which may be detached with a brush or the nails, and by numerous red patches. After a time these patches become of a dull white color. The subsequent manifestations are various: in one ease, no particular change occurs in the character of the symptoms; in another, the description accords substantially with the *Porrigo larvalis* of Willan; † in a third, we have the important characteristics of M. Alibert's *teigne furfuracée*, or *T. amiantacea*. The cases marked by patches of a dull white color seem to point to *vitiligo*, or the *porrigo decalvans* of Willan. The others may, I think, be properly identified with the several diseases whieh they resemble. These are fully described in the chapter entitled "Porrigo."

TREATMENT.

M. Rayer's system of treatment, for those symptoms of *P. capitis* which properly connect themselves with the subject of this chapter, is contained in the following passages:—"When the scalp is much affected, and the scurf forms in considerable quantities, the free use of a solution of acetate of zinc, in equal parts of rose-water and proof spirits, constitutes an agreeable and useful application. The scalp may be freely bathed with it twice a day with considerable relief. Pityriasis of the hairy scalp of infants at the breast "occasionally gets well spontaneously or by mere attention to cleanliness, after several months' continuance. The variety of pityriasis capitis which attacks adults and the aged, and is characterized by a simple powdery exfoliation of the

* Substantially, the "dandriff" of infants.

† See chapter entitled "Porrigo."

epidermis and pruritus, without serous discharge and matting of the hair, only requires attention to cleanliness and the application, from time to time, of some soothing unguent."

In the above extracts, it is apparent that M. Rayer meditates not so much a *cure* of the disease, either prompt or ultimate, as its occasional *relief*.

Dr. Neligan's system is as follows:—"When the scalp is the part affected, the hair should be cut close,—not *shaved* off,—and so kept during the progress of the treatment: this is not requisite in old persons, when the hair is thin on the head. In the early stages, weak alkaline ointments and lotions, with the addition of glycerine to either, will be found the most beneficial applications; but when the eruption is of long standing, or occurs in persons of debilitated constitution, the tannic acid, or dilute citrine ointment, should be substituted for the former,* the lotion being still used each time before the ointment is applied. When the eruption appears on the scalp of scrofulous children, cod-liver oil will be beneficially administered; but for those who are not scrofulous the alterative powders of the iodide of mercury and hydrargyrum cum ereta, as I have recommended for other diseases of the scalp, are better adapted. In very obstinate cases of any of the local forms of this eruption, more stimulating applications may be tried, such as ointments containing calomel or white precipitate, in the proportion of a drachm of either to the ounce of prepared lard or of white wax ointment, with the addition of glycerine, or lotions containing the cyanide of mercury or corrosive sublimate; but their effect must be carefully watched, as they often cause a sudden aggravation of the symptoms. For the same reason the sulphurous mineral

* For formula, see "Therapeutics."

waters and sulphurous bath should be used with caution; yet they unquestionably prove at times of much benefit in chronic cases of the disease in persons of a languid circulation."

Dr. N. also lays much stress on a proper attention to the *diet*, in this disease,—advising that it be almost exclusively farinaceous, and strictly prohibiting stimulating or heating drinks.

I have quoted thus at length, in order that the reader may be afforded an adequate means of comparison between the best "regular" treatment of the affection under notice, and the more simple method which I have for a number of years employed with uniform success.

It is proper to remark, that as the formation of dandruff is owing to a want of tone of the surface producing it, any agency, whether medicinal, hygienic, or topical and mechanical, which tends to strengthen the affected part by quickening its vital functions, must be of service; and therefore those directions of Dr. Neligan which come under the *second* of these heads (hygienic) can scarcely ever be out of place, in aggravated cases of the disorder, though they are not often essential. All the others, if it can be shown that the disease is promptly cured without a resort to them, are manifestly superfluous.

Dandruff, however copious, and however long the case may have been standing, will cease to form, after a few days' or weeks' faithful use of a compound formed by the union of two tinctures, viz.: of Murillo Bark and of Mulberry Root, made as follows:—Let the tincture of Mulberry Root be prepared as was directed for the tincture of Wild Indigo Root, in the chapter upon Debilitation of the Cuticle (4 oz. pulverized root, and one pint each of alcohol and of water); and the Murillo Bark tincture thus: To one pound of Murillo Bark, finely pulverized, add one quart of 80 per cent. alcohol,

diluted with one pint of soft or distilled water; place the mixture in a tight vessel and let it stand six or eight days.

Equal parts of these two tinctures, united and applied freely to the scalp once in twelve hours, will soon afford relief from the more prominent symptoms, and will eventually effect a radical cure.

CHAPTER XVII.

ECZEMA.

Impetigo; Plica; Porrigo favosa.

THOSE various forms of cutaneous eruption that consist in an elevation of the epidermis produced by the collection beneath it of a thin watery fluid which though at first transparent eventually becomes opaque, are by modern dermatologists generally thrown into one group or order, to which the term "Vesiculæ" is applied.* Previous to the time of Willan, the order Vesiculæ included all eruptions in which matter is thus effused; but this author restricted the name to those eruptions in which the effusion is at first transparent and the cuticular elevations very small and rounded,—the larger forming a new class termed "Bullæ." Neligan, like Wilson, unites the two classes, and includes Scabies, a disease which the latter writer places by itself. Mr. Plumbe professes a good deal of contempt for ideas of classification based on the external manifestations of cutaneous disease, believing that the true system should refer to constitutional causes. However this, it is apparent that

* Wilson employs instead the phrase "Effusive Inflammation of the Derma."



ECZEMA.

Crustula laminosa. *Humid tetter.* *Eczema rubrum.*

the various disorders which have been thus associated are really related, not only physically but constitutionally. Wilson, in his familiar little treatise on the Skin and Hair, styles the various eruptions of this order, "watery pimples," or vesicles, and says of them that, as may be supposed, they "present a great variety in point of number and size; some are so minute as scarcely to be discernible without close inspection, while others increase to the magnitude of a hen's egg. They are numerous in the inverse ratio of their size, the smaller ones being very abundant, and the larger ones scanty and few. These primary distinctions in the size of the pimple form the basis of their division into four genera. The smallest vesicles, which are about the size of a pin's head, and are often clustered together in vast numbers, are known by the term *Eczema*; when they are of larger dimensions, being equal in bulk to a small pea, they are termed *Herpes*; when of somewhat larger size, they are designated *Rupia*; and when they assume the bulk of blisters, they are termed *Pemphigus*." This description, though whimsical and faulty, contains enough of elementary truth to deserve praise for its cleverness.

Eczema, in the opinion of some dermatologists, is simply the effect of *heat* applied to the skin. Indeed, the same origin is assigned to the other vesicular diseases alluded to above. The exciting cause may proceed from within or without; in the latter case the produced eruption has been termed "artificial," to distinguish it from the one proceeding from natural causes. A blister caused by a burn is an eczematous phenomenon; and the heat of the sun frequently occasions an eruption having all the external characteristics of eczema. Indeed, at least one author devotes the greater part of his space, in his chapter on Eczema, to the eruptions produced by the heat of the sun, and by the use of

mercury. M. Rayer, in the course of his extended observations on this disease, remarks that it is very readily confounded with "certain vesicular eruptions artificially produced by the action of the sun's rays." Wilson thus illustrates the philosophy of eczema:—"Inflammation is excited in the sensitive skin by an inward or an outward cause, and the inflamed vessels pour out the watery part of their blood, and so raise the scarf-skin from off the sensitive layer in the form of a small dome, which in some situations is conical, in others, a segment of a sphere." My own idea is, that mere heat applied to the skin—heat no greater than that of the solar rays or of a temporary inflammation—could not separate the constituents of the blood, and produce vesicles, if the subject were suffering under no functional or constitutional derangement; and that in the cases in which these effects have been produced—particularly by the heat of the sun—a predisposition to them in the system must be inferred; furthermore, that the history of most eczematous affections of a genuine character favors the supposition that the eruption is only a *manifestation* of disease, a visible symptom of constitutional or functional disturbance. If it be produced by the application of *heat*, whence is the heat derived, in those cases in which its source must be supposed to be internal? Can the inflammation occur in a state of perfect health, spontaneously?

Not to dwell longer on this point, I proceed to a brief description of eczema. The eruption is well known, under the appellations of "Scall" and "Humid Tetter," and is very common. It may appear on the face, scalp, arms, back of the hands, and more rarely, on the trunk, and lower limbs; and in any situation it assumes various conditions, according with the state of the constitution, the degree of natural irritability of the skin, and the method of treatment adopted. Its primary general

characteristic is the appearance of the minute transparent vesicles before mentioned, which are frequently no larger than the head of a pin, and are closely but irregularly aggregated, the affected parts being usually more or less inflamed. Even in *ezema simplex*, the mildest form of the disease, although the skin may appear, on a casual inspection, of the natural hue, a magnifying glass reveals a narrow red areola, circumscribing each vesicle. Slight febrile symptoms usually attend *E. simplex*, and occasionally a trifling nausea and headache announce the attack. *Ezema rubrum*, as its title implies, is attended by far more inflammation than the other variety, and is generally preceded by sharp fever, the parts on which the eruption is about to occur being heated, painful, and swollen. The vesicles which soon appear present the usual characteristic appearance, and though profuse in number are grouped together in patches. As would be natural where the parts are so much swollen, they feel tense, even painfully so, and the tingling which is often felt in *E. simplex* is more noticeable in this form. In a day or two after the appearance of the vesicles, the contained fluid becomes opaque; in the simpler form they usually soon afterward dry up, and if the prognosis be favorable a few days' fine mealy desquamation terminates the attack: but otherwise (and this is the more general result) a new crop of vesicles appears, on the maturation of the first, pursuing a similar course; and this state continues, till, thin yellowish scabs having formed, a serous exudation begins, which frequently grows very copious. The inflammation continues, and the tingling gives place to persistent itching; if this be relieved by scratching, the symptoms are aggravated, and the duration of the eruption is prolonged. In *E. rubrum* the accretion of the fluid matter is so rapid that the vesicles which first appear, instead of subsiding, as in the

other form, eventually burst, and discharge their contents, which dry into crusts similar in appearance to the scabs of *E. simplex*, but thicker and more formidable. It may chance that this form of eczema heals as promptly, and in the same manner, as *E. simplex*, in those more favorable cases of the latter which have been mentioned; but far oftener it imitates the obstinacy which so generally characterizes its milder relative, and, especially when irritated by scratching or other means, puts on distressing features of aggravation,—such as an enormously copious acrid discharge; increased inflammation, which affects the surrounding skin, and is apparently produced, or intensified by the thin, acrid matter overflowing it; the swelling and thickening of the integuments, which grow sore, and intensely painful, and exhibit deep cracks and fissures; and the flowing of blood on the disturbance of the surface by scratching, which is almost inevitable, from the excessive pruritus of the parts. “The aspect of this form of the disease, when fully developed,” says Neli-gan, “is highly characteristic; the shining crimson or bright red surface, covered in parts with the ichorous discharge, and in parts with the thin film of desquamating epidermic secretion,* the deeper-colored fissures

* M. Rayer, speaking of *E. rubrum* of a mild type, observes, that “the part which is about to be affected with this eruption swells, becomes hot, red, and shining, as in erythema and erysipelas. It is soon covered with small confluent vesicles, transparent at first, but speedily becoming milky, which burst anon, and pour out a little red-colored serum. At a later period the cuticle, saturated with this fluid inspissated, becomes softened in some points, and detached in others, when it dries into yellowish laminæ of little thickness, which are soon replaced by slight incrustations, proceeding from the drying of the fluid poured out by the diseased surfaces. Lastly, the skin here and there presents small, pink points, around which the cuticle forms a true border, with a jagged edge, indicative of the dimensions of the vesicles.” He then describes a more intense form (the “*Dartre humide*” of French

and cracks, from which blood occasionally flows, and the tensely tumefied appearance of the whole." Though rather awkwardly composed, this little picture is very effective. It enables the imagination to take in simultaneously all the salient outward features of the disorder, and inspires the mind with a lively horror of eczema *rubrum*. The effect is materially strengthened by a supplementary touch. He observes, of this variety, that it "seldom gets well in a shorter space of time than two or three months, and occasionally, becoming chronic, lasts for years."* I believe that, so far as the ordinary method of treatment may apply, this tragic depth of coloring is amply warranted by facts.

When eczema is local, or, in other words, appears on but a limited tract, as the scalp, or face, it is more obstinate than the general form, and more inclined to become chronic. The more ambitious nosologists have

authors) of the same disease, in which the irritating fluid, which is poured out profusely, excoriates the skin, and, large portions of the cuticle becoming detached, the "cutis appears beset with a multitude of pores, each of which might be covered with the head of a small pin, from whence a reddish-colored fluid exudes, sometimes in such profusion as to soak the clothes of the patient. At other times," he continues, "the small vesicles unite, become blended together, and form irregular bullæ, analogous to those observed in certain cases of erysipelas. The epidermis, detached over a considerable space, bursts at length, a torrent of serum escapes, and the sub-epidermic layer, now exposed, and greatly swollen, besides the pores that have been already mentioned presents false membranes, of a whitish color and soft consistency, which adhere slightly to the structures beneath. The serous exudation soon becomes less in quantity, and ceases entirely: the cuticle, moist at first, and slightly adherent, becomes of a yellowish or greenish color, *by being soaked in the fluids exuded*; it then dries, falls, and is replaced by other laminated incrustations of a firmer and more permanent description," etc. The significance of the words I have emphasized above will be pointed out further on.

* He elsewhere speaks of a case of eczema *faciei* which had lasted twenty-five years.

evinced their usual industry, in these cases,—giving the disease a new name for every region of the body in which it may exhibit itself exclusively. Thus, we have *E. faciei*, before mentioned, *E. capitis*, *E. umbilicale*, etc. The first variety offers no particular point of dissimilarity to *E. rubrum*, and may therefore be dismissed without further remark. *E. capitis*, which comes more immediately within the scope of this work, merits a more extended notice.

Owing, in part at least, to the presence of the hair, *E. capitis* presents a greater variety of symptoms than the other forms of eczema, and thus physicians are often perplexed both in the diagnosis and in deciding on the mode of treatment proper in the case. It begins very much in the manner of a severe case of *E. simplex*, or a mild form of *E. rubrum*. The vesicles, which usually are quite minute, and often, indeed, almost undistinguishable, are announced by more or less of heat, tingling, and itching, in the part about to be affected, and may appear either in patches or diffused over a large surface,—the skin looking red and inflamed. When they have burst, the characteristic serous exudation begins; and from that time the course of the disease is marked by much eccentricity.

I propose to let the term *Eczema capitis* stand for quite a number of manifestations to which a different classification has usually been accorded, and thus contribute something toward the good work of simplifying the science of dermatology, and of facilitating the cure of cutaneous diseases,—to which latter end a knowledge of the nature of the affection in hand is of course a prime requisite. Much of the traditional “obstinacy” of certain cutaneous disorders may justly be ascribed to ignorance of their real nature on the part of the practitioner,—though much more has always connected itself with a lack of skill in their treatment. The

cholera was an "obstinate" affection till physicians had learned what it was, and the way to subdue it.

Sometimes the watery effusion which begins to flow on the rupturing of the vesicles, continues long to be the principal outward indication of the disorder. There is little soreness, inflammation, or irritation of the parts: though the condition of the scalp is in these respects apt to vary, and perhaps the patient may be more sensible of the symptoms designated by night than by day. The hair is kept unpleasantly moist by the exudation, and dressing it is not an agreeable episode; and this is almost all that can be said of the complaint. Irritation of the scalp, with a comb or the finger-nails, naturally aggravates the disorder, as the tender cuticle is easily torn, and results in enhanced inflammation, greater soreness, and perhaps the changing of the serous to a sero-pustular exudation, which concretes into yellowish scabs.

The foregoing may be taken as the description of *E. capititis* of a very mild type; and one thus affected should be thankful the attack is not worse. Sometimes the disease quickly assumes a chronic form; the exudation, as fast as it appears, dries into furfuraceous scales, and then ensue the prominent symptoms of a disease, generally thought to be porriginous, styled "*Teigne furfuracée*," or *Porrigo furfurans*; a full description of it will be found in this work under the general head of "*Porrigo*," where it has been placed, partly out of deference to the received opinion, but more especially on account of its name. The connection of *Teigne amiantacée* with *T. furfuracée* having been shown in the same place, we thus have still another new eczematous affection. Neligan, while speaking of the diversity of appearance of *E. capititis*, mentions a form in which "the scalp is raw or excoriated, and secretes a thin whitish pus, which dries into grayish brown scabs," etc. Here

we have a vivid hint of *Teigne granulée*, another of M. Alibert's "Dermatoses Teigneuses." And that well-known disease of infants, *T. muqueuse*, or "Porrido larvalis," or still otherwise, "Crusta lactea," or "Milk-crust," or "Tooth-rash" (for it bears all these gorgeous titles),—though the "minute pustules" with which it sets out must not be called "vesicles,"—is essentially, both in its history and in the treatment it demands, another eczematous affection.* The gravity with which the dermatological pundits dwell on the weighty circumstance whether or not a little pimple was "pustular" *from the start*,—when the difference is manifestly one purely of haste or leisure, on the part of nature, in effecting the same purpose,—would be ludicrous were it not coupled with the most pitiable impotence. They construct their new diseases, and evince the most astonishing acumen in the way of a *diagnosis*,—apparently to forestall the conclusion at which almost any sensible mind would otherwise arrive; solemnly enunciating their learned formulæ, varied to suit every variation of symptom, and challenging our admiration and respect with their grave profundity: and were their counsels of any apparent effect, save (usually) that of prolonging the disease, they would earn our gratitude also.

"The local inflammatory action by which a pustule is produced," says Neligan, "affects the deeper structures of the derma as well as the epidermis, in consequence of which the sub-epidermic effusion is purulent, while in vesicular eruptions, the superficial layer only of the derma being inflamed, the effusion is serous." The truth (in my opinion) is, local circumstances decide, in many cases, whether the elevation of the cuticle will be a pustule or a vesicle. If the skin be thick and strong, and the habit of the body full, the tendency to matura-

* Wilson terms it a variety of Impetigo.



IMPETIGO.

Impetigo eczematodes. Crustula sebrosa. Humid crusted tetter. Impetigo figurata. Porrido favosa.

tion, of the fluid to be voided, will for the latter reason be great, and for the former we shall more likely see a pustule than a vesicle. A thin skin, affected with a diffused superficial inflammation, would probably exhibit vesicles instead of pustules, though the nature of the substance to be eliminated would probably present no essential peculiarity. Who shall say that when the substance which fills the interior of a pustule first begins to collect, it is not essentially serous, as is that of a vesicle? When the vesicles of eczema have existed for a short time, the contained fluid, at first watery and clear, begins to grow clouded, and is manifestly thickening into pus.* But it usually, on account of the thinness of the film which confines it, makes its escape before the process is completed, and the ensuing effusion, having still less time for thickening, is more or less thin and watery. It remains to be proved that this substance differs from true pus except in degree. Says Plumbe, speaking of eczema, "it is generally, when occurring to a small extent, and from the operation of local causes, a distinctly vesicular disease. Now and then, however, when due attention has not been paid to it, a healthy state of parts does not so speedily follow; and after it has been a little time established, the new vesicles which form are of larger dimensions, and their contents become opaque before they break, thereby giving the disease *an affinity to Impetigo.*" This is the testimony of an experienced practitioner and close observer. I shall have other reasons to adduce for considering the disease last named a form of eczema. Indeed, Dr. Neligan, one of the strict nosologists, observes, of eczema *rubrum*, after speaking of the ordinary characteristics of that form, that "in some cases the local inflammation is still more

* It is proper to admit that there are some who would doubtless deny that this thickened substance is true pus.

acute, the discharge *becomes sero-purulent or purulent*, concreting into thick yellowish scales, and scattered pustules form on the surface; it is then," he continues, "termed eczema *impetiginodes*, from the resemblance which it presents to impetigo."* Mr. Plumbe remarks that "impetigo rarely comes under the eye of the mediæval observer at its first commencement; and I am inclined to think," he continues, "that at this period the term pustule is *improperly applied* to its *chief feature*, the fluid which the vesicles contain being *transparent*, though the change to opacity takes place in a few hours." This author asserts (see note on page 380 of his work) that "impetigo of the hairy scalp does not occur in England." But "*impetigo capititis*" is described at great length by other authors: thus the inference is plain that he has confounded eczema with impetigo without knowing it! And when an acute and experienced observer, like Mr. Plumbe, does this, I think my theory is essentially (though unwittingly) supported by him. According to this author, the scales of impetigo are of a yellowish brown hue; and Wilson (in his smaller work) says it is "one of the erusted tetter, the *yellow-crusted tetter* [the italics are his own]; its crusts, in some instances," he continues, "having the aspect of a dab of honey dried upon the skin; and this latter resemblance has been deemed sufficient to gain for it the surname of the 'honey disease,' or honey-scab." Dr. Neligan, who in many things follows in the track of Rayer, describes these honey-like crusts as *greenish-yellow*, and this circumstance constitutes, in his diagnosis, one of the chief points of difference between impetigo

* Of this form he further remarks that it is "generally met with in infants and children, is attended with well marked febrile symptoms, and much local pain and itching, and lasts for from three to six weeks, or occasionally, becoming chronic, for as many months; its duration being kept up by the successive eruption of semi-purulent vesicles."

and eczema. But Rayer himself is not always consistent in his statements. Although he says, in his general view of impetigo, that the "pustules pour out a yellowish fluid, which dries quickly, and turns into thick crusts of a bright or greenish yellow color," yet when he comes to speak of impetigo of the scalp he says "the crusts are *brown*, or of a *dull gray*, like small pieces of dirty plaster." So, of *I. figurata** of the limbs, he says the crusts are "of a greenish or brownish yellow color;" and of *I. sparsa*, he observes that "the pustules soon burst and pour out a sero-purulent fluid, which is gradually changed into yellow-colored laminated scales," etc. Besides, if any importance be attached to his statement in any particular place, to the effect that crusts of a greenish, or greenish-yellow hue, are characteristic of impetigo, it must be remembered (see a previous note, in the present chapter) that, in speaking of eczema *rubrum*, he makes use of the following language:—"The cuticle, moist at first and slightly adherent, becomes of a yellowish or greenish color, *by being soaked in the fluids exuded*;" so that whatever importance be attached to that particular shade, as a symptom, it can possess no value whatever in a diagnosis,—at least so far as the testimony of M.

* *I. figurata* appears in the form of circumscribed, irregular, isolated patches of pustules, more numerous on the face, according to some writers, others finding it oftener on the hands. There is also a diversity of opinion with regard to the accompanying constitutional disturbances; Willan declares it to be announced by feverish symptoms, headache, loss of appetite, etc., and finds it oftener on the face, trunk, back, etc.—his followers (who are numerous) of course saying the same thing, in very much the same way. Mr. Plumbe's experience, apparently, is very different. He usually finds no constitutional symptoms, and believes the "greater number of cases are produced by local irritation." He adds, in a note, that the most intractable cases he has ever met with, "have been caused by the imprudence of using strong alkalies to the skin, for the purpose of removing particular stains." It is not always easy to decide, where doctors so emphatically disagree.

Rayer is concerned. It is probably merely an accidental circumstance, and possesses no significance whatever.*

M. Gendrin, having had an opportunity of making a *post-mortem* examination of one who had died of another malady, while suffering from an attack of impetigo, has given a careful description of the part affected with the latter disease. In the course of it he says:—"On the edges of a section made through the diseased skin, it could be observed that the small, reddish, closely aggregated, but only slightly prominent granulations, which were situated beneath the crusts, were made up of minute grains about the size of the head of a pin, of a liquid and greenish-yellow, cheesy-like substance; the surrounding cutaneous tissue was red, and matter similar to that which was secreted by the pustules of the eruption, and which, by drying, formed the crusts of the disease, oozed out of it when pressed between the fingers." When the yellow scales

* "The grand and predominant features of impetigo," observes Mr. Plumbe, "are extreme irritation and active inflammatory action, accompanied or followed by a proportionate degree of relaxation of the vessels of the part involved," etc. He qualifies this view in another place, by the use of the following language:—"The descriptions of impetigo, which have been heretofore given, do not appear to have been founded on sufficiently minute observation of its origin and progress, and apply only to cases where the diseased secretions are allowed to lodge on the spot, to become dried and hard, and, consequently, a cause of considerable aggravation of the irritation, heat, etc., which properly belong to it. The influence of frequent ablutions, with warm water, and the removal of the secretions as fast as they are produced, effect a strikingly important change in its characters; and the progress of any case, under such circumstances and management, would have been more than sufficient for Dr. Willan to have founded a distinct species on, and even warranted the impression, at first sight, that a different disease existed.—There is, generally, infinitely less of that fiery redness and heat,—successive crops of pustules much less frequently occur, and the duration of the disease is altogether shortened when the soothing application of tepid water, to the extent of clearing away the morbid secretions, is diligently attended to."

of eczema *capitis* are removed through the use of emollient poultices, the hair having first been carefully cropped, M. Rayer says that "the hairy scalp appears to be *covered with a cheesy matter*. Occasionally the inflammation extends to the subcutaneous cellular membrane, which forms small prominent tumors attended with very severe pain, usually ending in suppuration. The lymphatic glands of the nucha and parotid regions swell and grow painful. In some cases the vesicles of the eczema are mixed with the pustules of impetigo, and the incrustations formed are then much thicker and more adherent than wont. An immense quantity of pediculi usually appear on the scalp at the same time."*

* "Eczema and impetigo have between them many strong points of resemblance, as well in reference to the parts of the body most commonly affected, as perhaps in regard to the constituent element of the skin, the follicles, in which they are both evolved; it is not, therefore, uncommon to meet in the same individual with impetigo affecting one quarter, and eczema developed in another. It often happens also that we find a mixture of the vesicles of eczema and of the pustules of impetigo covering surfaces of the integuments of greater or lesser extent, and still more frequently do we find the vesicles of eczema becoming purulent and giving occasion to an anomalous variety of the disease, which has been described by Willan under the title of eczema *impeticinodes*. When this variety makes its attack in an acute form, the tension, heat, and redness are considerable; it is not now mere tingling and itching that are complained of, but shooting and violent smarting pain. The vesicles now pass rapidly into the purulent state; the cuticle, raised in large flaps, is impregnated with the fluid effused, and acquires the appearance of greenish-colored laminated scales, which being before long detached, a surface is exposed of as bright a red as carmine. When the eruption is considerable, the ichorous fluid secreted is so profuse that dressings of every kind, and even the bedclothes and bedding are drenched with it; the smell of this matter too is as offensive as possible; it is faint and sickly, and something like that which a large burned surface in a state of suppuration diffuses. Around these impeticinous eczemas we commonly observe a tumid red circle, the surface of which is studded with small vesicles, transparent, milky, or dry, according to their ages, and in all respects analogous to those that characterize eczema *rubrum*. The vesicles and incrustations are occasionally renewed successively, and the disease becomes chronic."—Rayer.

M. Rayer, after speaking of the various effects produced by the action of eczema, says that "the fluid excreted by the diseased surfaces, serous, limpid, and almost inodorous, in one case, is turbid, yellowish or greenish, and more or less consistent, in another; it has a faint and sickly smell in eczema *impetiginodes*, especially when pustules of impetigo occur mingled with the eczema. In drying, this secretion gives rise to the formation of scales which have some resemblance to those of impetigo. When the inflammation runs high, it may implicate the bulbs of the hair and the matrix of the nails, and cause these appendages of the skin to be detached. In brief, the primary seat of eczema is in the follicles of the skin; but other elements of this tissue are affected in eczema *rubrum* and *impetiginodes*. The papillæ, the entire thickness of the dermis, the subcutaneous cellular membrane, and the lymphatic glands, are occasionally affected one after the other: hence those small abscesses that form in children who are attacked with eczema of the head, and those painful inflammatory swellings of the glands which occasionally end in suppuration. Other diseases of the skin (*aene rosacea* [*couperose*, or *cuperosa*], *mentagra* [*syeosis*], and *impetigo*) also affect, and indeed more evidently affect the follicles than eczema. There are consequently essential differences between the various diseases of the skin, which must be sought for elsewhere than in the immediate affection of the several anatomical elements of which this tissue is composed." But where else do the nosologists look for these "essential differences?" And have they really made plain the essential difference between eczema and impetigo?

Plica, or trichoma, a disease which will be found described at length under the general head of "Porrigo," is evidently an eczematous affection. "Its real character," observes Mr. Plumbe, "may be summed up prob-

ably in a very few words,—an inflammatory disease of the scalp, producing a viscid adhesive secretion, which copiously flows over and among the hair, matting and glueing the latter together in irregular bundles.” According to M. Alibert, “the *post-mortem* examination of persons who have died while subject to plique, discloses in the bulbs of the hair of the diseased part a considerable enlargement; and when they are pressed, a yellowish fluid exudes, similar to that which during life passes along the hair and glues it together.” Although it is generally said by dermatological writers that in eczema the hair remains unaffected, yet they usually mention exceptions to this rule, relating chiefly to the cases of inordinate inflammation or of deeper seated action, in which the hair falls, in consequence of the hair-follicles becoming involved in the inflammation; and its restoration may depend on the duration of the attack.—Mr. Plumbe, who had opportunities of *post-mortem* examination of the tissues, in old standing porrigo (which must not be understood as the cause of death), observes that “where the hair had dropped off, or appeared to have been extirpated by the disease, the adipose substance was evidently wasted away in consequence of the long prevalent excessive irritation in the superineumbent cutis. In other portions of the scalp, where the surface had remained unaffected and the hair grew strong, no deviation from health in the parts beneath could be distinguished.” So that when the hair is *irrecoverably* lost by disease of the scalp, it is reasonably safe to ascribe the circumstance to atrophy of the adipose tissue, into which the bulbs of the hair often extend, and the consequent involvement of the hair in the general destruction. But where hair has fallen from the local inflammation occurring in fevers,—for instance, scarlatina,—as the hair-follicles yet remain perfect, we may look for a new growth of hair when the inflamma-

tion of the parts shall have subsided. Thus, the fact that porrigo is a follicular disease, while it may account for the changed appearance of the hair almost from the first, does not afford the ultimate cause of the hair's destruction; for a temporary inflammation of the hair-follicle—even if accompanied by maturation, as in cases of plica—does not necessarily destroy the hair, since the tissues which support the bulb are not wasted, and nature possesses every needed facility in the work of propagating the new hair, in case the old has fallen.*

No sufficient reason can, I think, be adduced for withholding the disease termed “*Porrigo favosa*” (see “*Porrigo*,” for a description of it) from association with this already tolerably large family of eczematous affections. It does not merit the title of “*Porrigo*,” since it is a totally different disease from the one which is now known by that title. In every essential particular it resembles the “parent disease,” if I may so fancifully term it, in one form or another. As for the property of contagion, which has been claimed for it, there are several considerations to be weighed before reaching a definite conclusion. First, has any case of clearly-defined “*P. favosa*” ever been proved to have been contagious? May not a neglected case of *Porrigo lupinosa* (the true porrigo) have been mistaken for it? Second, is it by any means certain that the phenomena of contagion have been sufficiently examined or comprehended? In cases of eczema, it is well known, the disease spreads—that is, is made to appear on a surface origi-

* M. Rayer observes that “depilation, the utility of which is incontestable in favus [porrigo], is always injurious in acute impetigo of the hairy scalp, or of the skin; neither is this measure ever necessary in the chronic impetigo of those regions.” This would seem to afford a noteworthy point of difference between impetigo (and kindred affections) and porrigo. For a full discussion of the merits of depilation in the latter, see chapter on *Porrigo*.

nally healthy—apparently by the mere overflowing of the serous exudation from the first vesicles. Is not this phenomenon a species of contagion—or, rather, infection? Third, is any one prepared to assert that, if this effused fluid were to be applied to the *cuticle of the same part* in another person whose system chanced to be *in a state similar to that of the patient*, no result like that which follows on the cuticle of the patient would ensue? In my mind, these considerations have materially weakened the main objection to the proposed association. But the reader, should he care to pursue this question of contagion, will find it treated more at length in the chapter entitled “Porrido.” A powerful argument in favor of considering all these various affections as so many manifestations of one primary disease, whose nature is at once constitutional and local, lies in the fact that they are successfully treated on this theory, and in essentially the same manner.*

Though the idea of a relationship between eczema and *Lepra* may be thought sufficiently chimerical, I think I can show, at least, that it is not absurd, though I do not wish to be understood as supporting the theory of their *identity*, or even very intimate connection. Eczema, as will be remembered, usually affects those who are of a full habit,—or those, more particularly, in whom the processes of life evince a liveliness of vital action. A good state of the circulation would seem essential to the production of the phenomena of ordi-

* “When it is found that a certain class of remedies act beneficially on deranged conditions of the animal economy, concerning the true nature of which doubt exists, it cannot be termed *a petitio principis* to infer that such derangements have a similarity in greater or less degree to affections the nature of which is known, and which are benefited by the same class of remedies.”—*Neligan*.

Dr. Neligan’s methods in eczema *capitis* and impetigo *capitis* are essentially and almost literally identical.

nary eczema. But let the exciting causes of eczema, or similar causes, operate in a constitution or on a surface more or less debilitated, where the original activity, if ever remarkable, has long subsided into chronic slowness and torpor, and we should naturally look for phenomena of a different complexion. Even children, of a spare habit, and irritable but not very *thin* skin, and a circulation not remarkable for its activity, might, if subjected to those influences which in others are known to induce the symptoms of eczema, exhibit *other* symptoms, more or less intimately related to those, and the resulting affection would in one case seem at times like eczema, and in another might bear but a remote resemblance to it. That this is not mere vague theorizing, may appear on a consideration of the nature of a *papule* or papula, and of one or two diseases of a papular character. I avail myself of the definition of Neligan, who describes a papula as "a very small and acuminate elevation of the cuticle, with an inflamed base, not containing a fluid, not tending to suppuration." In defining the order "*Papulæ*" he observes:—"This group of cutaneous diseases is characterized by the eruption of minute solid elevations of the skin,—*papulæ* or *pimples*,—generally reddish, but sometimes of the natural color of the part or even paler, which contain neither serum nor pus, terminate in the desquamation of fine scales, and are almost invariably attended with intolerable itching." The *papulæ* "may appear on a single region of the body only, or may be diffused generally over the skin; they vary in size from that of the head of a small pin to that of a pea, and are usually developed rapidly, generally coming out in successive crops. They terminate in resolution, with desquamation of the epidermis in fine minute scales, which continues for some time; but occasionally superficial ulceration of the integuments occurs." Lichen (which includes stroph-

ulns) answers to the foregoing description. *L. agrius*, which sometimes follows *L. simplex*, but oftener is idiopathic,* is a more intense form of the disease, being preceded and attended by more or less fever, burning heat, and redness of the parts, etc.,—reminding one of eczema *rubrum*. “The fever abates considerably, or altogether subsides on the appearance of the rash, which is developed in the form of numerous bright red, minute, acuminate, shining papules, clustered together on an incircumscribed inflamed patch of the skin, often of considerable extent. The papules do not enlarge in size, but become more elevated *from lymph being effused at their base into the subcutaneous areolar tissue*, which is in consequence swollen and hard. . . . As the disease advances, the papules ulcerate at their apex, and give exit to a sanguous ichor, which concretes into thin, friable, yellowish scabs: the skin becomes more and more inflamed, thicker, dry, and rugose, and eczematous vesicles and pustules of acne or impetigo appear, mingled with the lichenous eruption, or owing to the intense degree of local inflammation, are developed on the surrounding integument. In this extreme form of the eruption, the skin presents an hypertrophied aspect, is of a dark livid color, uneven on the surface, rugose, fissured, and discharges a copious serosity.” If lichen *agrius* be not eczema *rubrum*, slightly modified by the circumstance of a greater toughness of skin and the fact that there is a lesser quantity of morbid matter to be eliminated from the system than is usual in eczema, I own myself incapable of making a comparison. At least, it would hardly seem arrogant to claim a relationship more or less intimate between eczema and lichen. But on the other hand, as I shall proceed to show, the latter disease may boast (if such a

* Primary or original.

connection be really a matter of pride) of being related to lepra. Lichen *simplex*, the milder form of the disease, may be acute or chronic, but "the papulae in either case run the same course, attaining their greatest size on the third day, at which time they are markedly acuminated; they then seem to remain stationary for two or three days more, when they fade somewhat, are less prominent, and a minute scale appears on the apex of each; this desquamates, and a general epidermic desquamation from the affected surface continues for three or four days in the acute and for a longer period in the chronic cases. In the latter, the skin after a short time becomes thickened, evidently from depositive inflammation, and the diseased integument is then elevated above the level of the surrounding skin." In the diagnosis Dr. N. observes that "when the papulae begin to fade and to desquamate at their apex, the eruption might be mistaken for psoriasis [lepra] *guttata*, from which it is to be distinguished by the scales being much thinner, more minute and branlike, and by the papular elevation of the surface from which they separate, as may be recognized with the aid of the lens, or felt by passing the finger over the part." And in his diagnosis of psoriasis he is obliged to discriminate carefully between lichen *circumscripatus* and psoriasis *lepræformis*.*

* Mr. Plumbe, in a concluding comment on a case which he had found in another publication, makes an observation which bears on this point.—"The predominance of the scaly state over that in which pustules existed, in this case, fully justifies its consideration as a case of psoriasis, though at the period when the eruptions of pustules occurred, the parts where the latter were situated very closely resembled the more aggravated cases of *impetigo*."—In a quoted passage from the account itself, the writer remarks,—"I frequently observe pustules and vesicles at the same time in impetiginous patients." This bears upon the question discussed a few pages since, in relation to the affinity of eczema and impetigo.

I do not care to occupy further space with these speculations,—which the reader can follow out by himself, should he feel inclined, through a close perusal and collation of the various descriptions to be found in this work. A carefully prepared synthetic essay on this theme could hardly fail of a good result. The efforts of most dermatological writers, having had a different aim, have so burdened the science with terms and distinctions that an ordinary lifetime must now be spent in mastering it,—to say nothing of meanwhile perpetually *experimenting* on the unfortunate patient, and thus cruelly aggravating his case, and suffering the pangs of distraction from the bewilderment occasioned by one's studies, and the torments which a secret feeling of professional impotence inevitably engenders.

It is idle to disconnect ideas of constitutional involvement from our notions of eczema. Were it philosophical to do so, we might expect to find any person with a sensitive skin frequently suffering from attacks of this disease. But out of so many who on this theory should be judged fair subjects, we really find comparatively few who ever have it, or even exhibit a tendency that way. I would not go so far as to insist that in every case of eczema there must have been an elaborate preparation in the constitution, or an accumulation of morbid substance awaiting an opportunity of escape from the system; but I think I am justified in asserting that in the majority of cases of undoubted eczematous affection there will be found to have existed, for a longer or shorter period, either a state of plethora, or a morbid condition of some of the secretions, resulting from over-feeding, or a condition, of the parts to be affected, in some degree abnormal, or lastly an hereditary taint or tendency. What is styled "general good health" may often be an accompaniment of these states or conditions; but that which many would pronounce good

health (since examples of perfect health are not surprisingly common, at least in this country) may often but poorly merit the title,—may chance, indeed, to be the mask of something very foreign from that ideal standard. Says M. Rayer, “I have seen children attacked with eczema of the hairy scalp who recovered by *changing the nurse*. I have seen many persons of mature years laboring under chronic eczema of the scrotum, verge of the anus, and other parts, whose malady was constantly aggravated by the slightest irregularity in point of diet.” In another place he observes that “in children, eczema of the scalp and face is often a salutary eruption. When it appears during the process of teething, it will hardly yield to treatment until [before] the teeth have appeared. In young women whose menstrual function is irregular, eczema of the ears and scalp is an intractable malady, and seldom gives way before some favorable change is effected in the state of the general health. The disease is always subdued with difficulty in women arrived at the critical period of life; and when it appears during pregnancy it can rarely be subdued until after delivery. When eczema is hereditary the cure of the disease is very frequently followed by a relapse.” He also states that relapses are very frequent, “particularly among individuals of an irritable and nervous constitution.” And again:—“when the ichorous exudation ceases suddenly, or in consequence of ill-timed medication, and the incrustations grow hard and friable, children become dejected, taciturn, restless, and evidently unwell. On the other hand, when the exudation is very abundant, the principal functions are frequently performed with the most perfect regularity, and the health of the little patients seems occasionally even to improve during the whole period that the disease continues. I shall add further,” he continues, “that those children who labor under eczema of the face and hairy

scalp whilst they are teething, rarely suffer from convulsions or obstinate diarrhoeas. This remark is in accordance with M. Billard's* observations," etc.†

The use of mercury—or perhaps it were correct to say the abuse of mercury—frequently gives rise to a disease which is very like eczema, if not the same. The constitution does not seem to participate in the disease so decidedly as it often does in true eczema. "The only marks of constitutional derangement commonly distinguishable," says Mr. Plumbe, "are a weak and quickened pulse, and a slightly furred tongue. The patient usually complains of weakness, but his appetite is not impaired. The bowels are regular, and the urinary secretion not much affected," etc. Further on he remarks,—"it has already been stated, that the duration of this affection is uncertain. It may even, though occasioned by mercury, be very limited in extent, and cease in a few days; and I have not seen a case even occurring in the most plethoric and healthy states of the system (and it is in such that it shows itself most formidably) continue longer than five weeks, though the formation of solid unbroken cuticle may not be affected for a much longer period.—The foregoing description," he adds, "applies more particularly to the more formidable species of the disease produced by mercury. To a much more limited extent, and in a milder form, it is not unfrequently produced by opium, antimony, bals. copaibæ, &c.; in which instances, the contents of the vesicles rarely become opaque, but are

* Of the Foundling Hospital of Paris.

† "Our inability in a multitude of cases to discover any evident or even probable cause of the disease, often leads us forcibly to the conclusion that eczema is most generally evolved and kept up by *some hidden alteration of the fluids and solids*. In this disease, as in almost all inflammatory affections, independent of external causes, the blood is buffy."—*Rayer*.

absorbed in a day or two, without rupturing the cuticle, being only followed by slight exfoliations of scurf." In another place he observes (of eczema in general):—"From the facts which have been recorded, it appears that it is only when the strength of the patient has been originally not very great, and when debility has been brought on by excessive discharge, that *typhoid symptoms* occur. Under these circumstances only is danger to be apprehended; and in such a state of things diarrhoea has occasionally come on, which has resisted every description of remedy, and ultimately destroyed life."

From the fact that a good number of recorded cases of eczema have occurred "after the appearance of catarrhal symptoms, while the system was under the influence of mercury," a number of physicians and others have formed the opinion that the disease is the result of "taking cold" at such a juncture; others however consider the train of circumstances, in general, accidental, and as possessing no particular significance.

"With reference to the precise anatomical *seat* of eczema," says Neligan, "dermatologists are not agreed; Cazenave adopts Biett's view, that it is an inflammatory affection of the sudoriparous glands; but it is evident that other structures of the derma are equally engaged." It may be observed briefly, on this point, that it would be well for the *savans* who are so solicitous in reference to the seat of eczema, to first arrive at a definite notion of the structure in which they search for the exclusive "seat" of diseases. Dermatologists have ere now, with great positiveness, located a disease in some particular stratum of the skin which has afterward been proved to have no existence. To this day, anatomical writers are not agreed as to the number of layers constituting the human skin. There is one thing certain: even a slight degree of inflammation, affecting a portion of the skin, may involve every cutaneous

vessel in its neighborhood ; furthermore, that the regional origin of eczema would seem to depend on the intensity of the attack ;—or, at any rate, the depth to which the inflammation descends, at the time when attention begins to be directed to the affection, is not to be determined by precedent, being governed measurably by circumstances which are themselves more or less accidental and ephemeral.

TREATMENT.

I have endeavored to show that eczema, impetigo, plica, and porrigo *favosa*, are substantially one disease, its various manifestations depending on peculiarities of constitution or of cutaneous structure. While the external variations may be great enough to indicate a certain catholicity in the selection of topical remedies,* the constitutional treatment (when any is deemed essential) does not exhibit a corresponding range.

Depletion is the main feature of the modern regular treatment, in most cases of eczema and impetigo. Aperients, purgatives, diuretics, diaphoretics, abstinence, bleeding, etc., are the principal agencies employed. In cases of acute eczema or impetigo it is generally thought unsafe to treat the disease with topical remedies alone. Thus, Mr. Dendy† declares it to be “replete with peril,” in cases of the former variety. In children of the strumous diathesis, however, afflicted with impetigo *asthen-*

* “ Idiosyncrasy of skin will induce a special form of eruption in one subject very dissimilar in its lineal characters to that in another, although the nature of the remote causes may very closely assimilate.” —*W. C. Dendy*.—(See following note.)

† Walter Cooper Dendy, Senior Surgeon to the Royal Infirmary for Children (England), author of “ Portraits of the Diseases of the Scalp, with the safest and most efficient modes of treatment,”—a very excellent work, published at London, in 1849. The plates of this little treatise are especially fine and accurate. They have served as models for some of the illustrations of the present work.

ica (crustula granulosa, tinea granulata, etc.), where there is debility and impoverished blood, or in cachectic or languid constitutions generally, it is obvious that depletion is unwise. In cases of children seized with crustula granulosa Mr. Dendy prescribes as follows:—

“Mild mercurial alteratives, as hydrargyrus cum cretâ, guarded by pulv. cretæ comp. or creta ppt., or pulvis aromat., if there be tendency to diarrhœa. This may be continued every evening for four days; then suspending it for the same period, and repeating it. The cod-liver oil should then be given, from one small teaspoonful to a tablespoonful, twice in a day.

“If the glandular enlargement should continue, the iodide of potassium, from one grain to five, should be added each night.

“If the bowels are confined, castor oil should be administered each second or third morning.

“If the debility be extreme, with tendency to flabbiness of the gums, etc., the syrup of the iodide of iron should be freely given—one teaspoonful thrice in a day—or the balsam of Peru, with compound tincture of bark and the acids, the quantities regulated by circumstances; or the solution of arsenic, carefully watching its influence.”

Changing the nurse is frequently a beneficial measure, not only in these but in other eczematous affections attacking *infants*. In the case of older children, and adults, judicious dieting is usually serviceable.

I do not attach so much importance to the constitutional branch of treatment in eczema as do most other practitioners; and I have promptly cured many aggravated cases with exclusively topical remedies, without perceiving the least unfavorable result in the constitution. But in cachectic patients I am greatly in favor of a tonic constitutional coöperative treatment, though the *eruption* can be cured without it: and in acute

eczema, with profuse discharge, I think it wise to resort temporarily to the use of purgatives and perhaps diuretics. There is no need to encumber my work with the formulæ for these.

As I have given the principal portion of Mr. Dendy's directions for the constitutional treatment of impetigo *asthenica**—termed by him *crustula granulosa*—I may also include his method for its topical management.

"If encrusted," he observes, "the hair should be cut by thin, sharp, curved scissors, and the crusts removed by emollient poultices of linseed and bread. With these may be combined lotions of the carbonate of soda, or sulphuret of potass, 3 j. ad $\frac{5}{3}$ 12. aq. flor. sambue. On the removal of the crusts, the head may be washed with a weak solution of carbonate of soda in marsh-mallow and poppy decoction, 3 ss. ad $\frac{1}{2}$ j.; the head being occasionally dusted with starch powder.

"In very stubborn or protracted cases, the citrine, tar, or white precipitate ointments, in various combinations and proportions."

In eczema *infantilis* (*E. impetiginodes*, *Crusta lactea*, *tinea larvalis*, etc.), termed by Mr. Dendy "erustula *viscosa*," the course of that experienced surgeon is substantially the same, constitutionally, as in *crustula granulosa*,—the object being to cure the internal disorder of which the eruption is the outward symptom. As Mr. Dendy's method of treating this disease may possess great interest for those who incline to an elaborate system of management in cutaneous diseases, I will give the principal portions of his text, from the "*Portraits*:"—

"Our first duty," he remarks, "will be to remove this remote source of irritation [internal disorder] by the substitution of healthy breast-milk, incision of the

* Commonly known as "granular-crusted tetter."

gums, and aperients, according to the cause. In the milder cases the fresh milk of the nurse may be sprinkled over the affected surface, or clear decoction of marsh-mallow and poppies; adding to the exhibition of castor oil or manna minute doses of hydr. cum cretâ, with or without aromatic powder.

" If the oozing be copious, a mucilage of white starch may be used, or the scalp may be *dusted* with starch powder. If the mouth be hot and dry, the gums should be freely incised, and more active aperients employed. If there be much restlessness—especially if sleep be often broken—red poppy syrup may be administered; and if the *pruritus* be very distressing, a lotion of hydro-cyanic acid should be applied: but if there be with this, fever, tossing of the head, or *twitching* of the fingers, it will be a question if we should interfere with the eruption, or apply one or two small leeches behind an ear. These modes will be adopted according to our belief that the remote irritation, or that of the eruption itself, may be the cause of symptoms. In some cases, collodion may be applied on a brush, as a defence against external irritation. In older children, milk diet will be the most appropriate, with aperients—as tartrate of potass, with or without powdered rhubarb—slight anodynes, and emollient applications. If the hair be matted by the discharge, this must be closely clipped with the razor-scissors.

" If after these palliative remedies have been employed, the crusts should be persistent, or a morbid change of structure exists, a mild solution of sulphuret of potass, in elder-flower water, should be applied on soft lint, or a double-singed rag; and, if this is still resisted, equal parts of citrine and spermaceti ointments, with one-fourth of their weight of iodide of lead, may be often useful.

" If the health should seem to suffer, especially if

chronic pruritus should exist, dilute sulphuric acid in barley-water should be freely given; the mild nitro-muriatic acid bath or lotion being adopted once or twice in the week, and purer air enjoyed."

The treatment prescribed by Dr. Neligan in eczema and in impetigo, is essentially the same for the former as for the latter. In the case of young and robust impetiginous patients the acute stages are met by active antiphlogistic treatment, "the daily use of saline cathartics, and local, or even in some cases general bleeding." Even in the old or debilitated, he bleeds when the inflammatory symptoms run high, "with much heat and tumefaction of the part affected," employing leeches. In the latter class of cases, however, he generally uses tonics, such as preparations of iron, "combined with vegetable tonics and saline purgatives," as in the following formula:—

R. Tincturæ Ferri Sesquichloridi.....	fl $\frac{2}{3}$ ss.
Infusi Quassiae.....	fl $\frac{2}{3}$ xvij.
Tincturæ Calumbæ.....	fl $\frac{2}{3}$ ss.
Magnesiaæ Sulphatis.....	$\frac{2}{3}$ ij. Misce.

"A wine-glassful to be taken every morning."

For scrofulous patients, whether young or old, he considers eod-liver oil to be the best tonic. "If the eruption is attended with scrofulous enlargement of the glands of the neck, from a sixteenth to a fourth of a grain of iodine may be dissolved in each dose of the oil, which should not exceed a dessert-spoonful three times a day for children, or a table-spoonful for adults; as when given in large doses the local disease is apt to be aggravated, apparently from its over-stimulating action on the system.

"In the chronic stages of the eruption, the administration of more decidedly alterative medicines is requisite, and a mild mercurial course is often singularly efficacious, especially when the mercury is combined

with iodine and alkalies. With this view the green iodide of mercury may be given in the following form for adults, a proportionately smaller dose being prescribed for children :—

“ Rx. Iodidi Hydrargyri Viridis.....	gr. iv.
Hydrargyri cum Creta.....	gr. xij.
Carbonatis Sodaæ Siccati	gr. xij.
Pulveris Myrrhæ	gr. vj.

“ Mucilaginis, quantum sufficit, ut fiant pilulæ duodecim.

“ ‘ One to be taken three times daily.’ ”

In many obstinate cases arsenic has been employed, as the arseniates of ammonia and of soda, in doses of from the twentieth to the tenth of a grain.

In eczema *capitis* Dr. Neligan’s constitutional treatment is substantially the same as for impetigo. His topical system, for both, consists mainly of the following features :—

The hair is cut close with sharp scissors—not shaved off,—and the crusts, etc., removed by poulticing with linseed meal;* then (in eczematous cases) the surface is carefully sponged with the weak carbonate of soda solution mixed with an equal quantity of new milk, and carefully dried, or (in impetigo), after the poultice, the weak lead wash, or some alkaline substitute is employed; this is followed with ointment of the bicarbonate of soda.

The weak alkaline wash consists of ten grains of carbonate of soda to a pint of distilled water. This, in eczema, is mixed with an equal quantity of new milk. When the scalp is clean, in mild cases an alkaline ointment containing twelve grains of the bicarbonate of soda to the ounce of cold cream is applied: repeating both processes morning and evening. If there be a tendency to inflammatory action, the carbonate of lead ointment

* See observation of M. Rayer, on the use of this substance, further on.

(four grains of the carb. of lead to the ounce of cold cream), or the tannic acid ointment (four to twelve grains of tannic acid to the ounce of cold cream), is substituted, with the subacetate of lead wash.

In impetigo capititis, after the scalp has been cleaned, the ointment of the bicarbonate of soda is used (twenty grains of soda to one ounce of prepared lard),—to which, when there is much local tingling and irritation, four minimis of chloroform are added.

“In some cases of impetigo,” says Dr. N., “greasy applications are found to aggravate the local symptoms, and then lotions should be substituted for them, such as twelve grains of the acetate of zinc, or six grains of the acetate of lead, or four grains of either the sulphate of copper or the sulphate of iron, dissolved in eight fluid-ounces of elder-flower or of rose-water.” This author is opposed to the use of the more active local stimulants.

Other writers are strongly opposed to the use of ointments, or other preparations containing grease, in cases of impetigo. Thus, Mr. Dendy applies alkaline lotions,* after the acute action has been subdued by the use of linseed cataplasms, purgatives, etc., and scarcely alludes

* The following formulæ are given by Mr. Dendy :—

R. Potass. subcarb.....	3j.
Decoct. papav.....	ibj.
Or, Potass. sulphuret.....	3iss.
Aq. distillat.....	312.
Or, Zinc. iodid.....	9j.
Ungt. cetacci.....	3ij.
Or, Zinc. sulphat.....	3ss.
Mucil. amyli.....	3j.
Aq. hos.....	3iiij.
Or, Acid. hydrocyan.....	3iiss.
Spt. rectificat.....	3ijss.
Decoct. althææ, vel aq. flor. sambuc.....	3vss.

to ointments. "If the crusts threaten a chronic form," he says, "the nitrate of silver or dilute hydrochloric acid should be applied, or the alkaline lotion may be doubled in its strength: or a combination of zinc, citrine, and tar ointment [ointments] may be used. In very old or inveterate cases, the sulphuret of antimony, or the solution of arsenic, may be cautiously administered."

Mr. Plumbe, also, condemns greasy applications, in both eczema and impetigo,—being especially emphatic, however, in the former instance. The ideas of this author have often appealed strongly to my judgment; and (at the risk of repeating a portion of that which I have elsewhere quoted from him) I think I shall do the reader a service in transcribing here some passages relating to his treatment of impetigo. His views of the nature of that disease, and of the result of constant attention to its manifestations, are particularly sensible, in my opinion, and merit general notice.

"The grand and predominant features of impetigo," says Mr. Plumbe, "are extreme irritation and active inflammatory action, accompanied or followed by a proportionate degree of relaxation of the part involved. The objects in view, therefore, should be, first, to diminish such irritation, and secondly, to supply the loss of tone which the vessels have sustained. It is evident, that the common sedative applications are not possessed of those properties conjointly, and hence arises the *temporary* effect only by which they are followed. The desiderata evidently consist of means which will at once relieve the turgescence and irritation, and correct the relaxed state of the vessels of the part."

It is frequently observed, by other authors, of some particular application, that its good effects are followed by a reaction, or that they must be persevered in to prevent such a result. A perfect remedy or system should not contemplate reactions.

"In the treatment of impetigo," remarks Mr. Plumbe, "the frequent removal of the diseased secretion has never been considered of sufficient importance. The benefit of this step, if carried into effect by frequent ablution of the part with warm water, is incalculable. By this plan, in conjunction with the exhibition of simple alteratives, entirely rejecting anything in the shape of ointments, or other greasy applications, the disease will be often readily subdued. The part may be kept in a state of moisture at other times by covering it with oilskin, or by the application of soft linen wetted in the liq. plum. acet. dil.

"In the more trifling cases, the mixture of a little alcohol with water, applied by means of a bit of linen rag, will be sufficient, if the habit of the patient be not full; but if the opposite state of constitution exist, it will be apparent that active depletive measures must be chiefly relied on."

If subduing local irritation, Mr. Plumbe declares that he has found no lotion equal to the following:—

R. Acid Hydrocyanic.....	3ijj.
Aq. distil.....	3viiss.
Alcohol	3ss. m. ft. lotio.

"Pieces of linen wetted with it should be kept constantly applied."

The diseased secretions must first be carefully cleared away. Its use must be continued, since the disease is apt to return with redoubled violence, if the application of the lotion be relaxed.

The above-named author observes that "the sulphur vapor bath acts occasionally as a curative measure with the greatest effect."

In his chapter on Eczema the same writer says:—"like most other cutaneous diseases, the eczematous eruption, sometimes by long and repeated application of the exciting cause, becomes more permanent and established,

and much less ready to yield to the applications mentioned [cooling sedative washes]. In this state the vessels of the part have become debilitated and relaxed by constant excitement, and the addition of a few grains of alum, or of the acetate or sulphate of zinc, to the spirituous lotion will be found necessary. This form of application is generally more useful in those cases which approach to the impetiginous character than any other. The use of ointments, or any other kind of greasy application, cannot be too much condemned.”*

M. Rayer observes that “in running eczemas of small extent, emollient fomentations have been found of service. When the disease is followed by painful and extensive exoriations, and the skin is red and swollen, or covered by yellowish-looking seabs of considerable thickness, soothing washes must be replaced by poultices of floury potatoes, of ground riee, and of crumb of bread, softened still further with decoctions of althea and poppy-heads. These cataplasms are greatly preferable to such as are prepared of linseed meal, which are observed occasionally to induce artificial vesicular and even pustular eruptions. When the parts of the skin affected are covered with hair, these various topical applications must be used folded up in a fine muslin rag.”

In my own practice I have found the Tiniture of Aloes of very great service in the earlier stages of eczematous affections. It may be prepared by adding to one pint of alcohol, diluted with half a pint of soft or distilled water, half an ounce of aloes. Let the mixture

* The use of ointments and other greasy and stimulating applications, in cases of eczematous eruption, is almost certain to be attended with ill results. A moment's reflection on the nature of the disease should suffice to satisfy any practitioner of the truth of this: but as it unfortunately happens that the treatment of many cases is purely domestic, no professional knowledge or intelligence can safely be presumed.

stand four days. The tincture should be applied to the surface freely, three or four times in a day, until an improvement is perceptible, when it should be used with lessening frequency till the eruption quite disappears.

Should the above remedy prove insufficient to arrest the progress of the disease, let a strong tincture of Green Walnut Leaves be used, and apply as directed for the tincture of aloes. The qualities of this preparation I have tested in many severe cases, and I know it to be invaluable. I am not particular in all cases to remove all incrustations previously to the application of these remedies. Ordinary attention to cleanliness is generally sufficient. I totally dispense with the use of ointments, poultices, oils, etc. Carbonate of soda and similar washes are generally a nuisance.

Depilation, or the uprooting of the hair, though it is known to be of service in porrigo (which see), is asserted by M. Rayer (who says its utility is incontestable in favus, or porrigo) to be an "absurd and cruel practice during the acute period of eczema of the hairy scalp;" and he even declares it is not to be recommended "when the inflammation has passed into the chronic state." He also considers it useless in impetigo. The question, however, possesses no practical importance, since these several diseases may be cured without a resort to depilation.

CHAPTER XVIII.

PORRIGO.*

Favus; Tinea; Scall-head; etc.

THE various writers who have treated of this disease are by no means of one mind in relation either to its name or its nature. Some authors include under the general head of Porrigo quite a number of disorders incident to the scalp; while others assume them to possess features sufficiently distinctive to warrant original titles: in fact, there are those who even separate them by wide intervals, throwing them into different classes. Mr. Plumbe, whose classification I have taken occasion to commend for its originality and plausibility, groups porrigo and sycosis, and several diseases not incident to the scalp, in an order which he styles "Diseases which obtain their distinguishing characteristics from, or originate in, local peculiarities of the skin:" that is, diseases which do not depend on a peculiar state of the constitution, or of the digestive organs. Later writers, influenced by the statements of M. Gruby and others,† connect the two diseases above mentioned with quite another link: or perhaps it would be correct to say that what in the former classification was a merely negative association, becomes in the latter a positive bond of sympathy. Neligan makes a group of them under the designation of "Dermatophytæ—from δέρμα, "the skin," and φυτόν, "a plant;" including "those cutaneous affections which are dependent on, or are characterized by the presence of parasitic plants on the diseased surface of the integuments."—I shall soon advert to this subject.

* The diseases entitled porrigo *favosa*, porrigo *larvalis*, plica, and porrigo *furfurans*, are also described in this chapter.

† See further on.



PORRIGO.

Favus. Honeycomb scall. Crustula favosa. Porrigo lupinosa. Tinea. Scall-head.

Alibert, a philosopher prone to the institution of analytical distinctions wherever there is the least promise of success, includes a very large family of cutaneous disorders under the general title of "*Dermatoses Teigneuses*." The first species of the "genre premier" is "Aehore," divided into "l'Aehore muqueuse" and "l'Aehore laeteumeux,"—corresponding with the affections otherwise known as "*porrigo larvalis*" and "*erusta lactea*."^{*} The second species is termed "Porrigine," or *Porrigo*, of which he gives four divisions, as follows:—"La porrigine furfuracée," "La porrigine amiantacée," "La porrigine granulée," and "La porrigine tonsurante." These will be briefly described and commented on toward the close of the present chapter. None of them corresponds with the late English definitions of porrigo,—unless *P. granulée* and *P. furfurans* be in some cases considered as the sequel of long-standing porrigo; but under the head of "teigne† faveuse" he describes a disease nearly if not quite identical with that which was formerly denominated porrigo *lupinosa* ‡ and is now accepted as the true form of porrigo. The definite settlement of this point is one of the many gratifying results of the careful attention which has of late years been given to dermatological studies by men of learning and ability.

The first external symptom of porrigo is the appearance on the scalp of small smooth perfectly circular spots, slightly elevated, of a bright yellow color, more or less numerous, generally isolated, and piercéd in the centre by the aperture of a hair-follicle, whence issue

* Regarded as one, in the present work.

† The term *teigne* or *tinea* originated among the Latins, who gave it to porrigo from the resemblance which the little holes eaten by the disease bear to those which mark the ravages of the mothworm in books or clothing: *tinea* being the name by which the insect was known.

‡ "Lupin-seed scab of the head."

one or two hairs. They are usually, at the outset, no larger than the head of a pin, and are slightly depressed in the central portion,—or, in other words, their upper side is concave or cup-shaped. They increase in size by gradual additions to the circumference, still retaining their characteristic concavity, but rarely attain a diameter of a quarter of an inch. There is usually a little redness of the skin, in the immediate neighborhood of the eruptions, but no apparent heat or itching, nor is there any fluid accumulation, or exudation, nor a tendency to suppuration either in or around them. Where the crusts are rather thickly planted, they eventually unite with each other, and form large, irregular masses, at the outer edges of which may still be seen parts of the outlines of the original circular crusts. The term *favus* was given to these crusts from their resemblance, in color and in the characteristic depression of their surface, to a honeycomb. Wilson thinks the comparison absurd, since the cells of a honeycomb are hexagonal in shape; but I am of the opinion that it was the *under side* of the comb on which the analogy was based. Here we frequently observe an irregular surface, with numerous shallow, rounded depressions, such as characterize the aggregated crusts of the disease. The formation and increase of the crusts soon give rise to local irritation, and the patient has an irresistible propensity to scratch the affected parts, thus frequently occasioning a complication of the symptoms. Even ulcerations of greater or less extent are thus produced. Frequently, as the disease advances, small pustules appear, in spots on which the *favous* crusts have not yet formed; and these (also frequently torn with the nails), with the ulcerations just mentioned and the exudations from both, occasion a very offensive state of the scalp. An abominable odor rises from it, and even *pediculi*, in vast numbers, are sometimes engendered. Of course

it will be understood that these extreme manifestations are due to ignorance and neglect of the disease, and may be wholly prevented by a prompt and judicious course of treatment.

The favous crusts are easily detached, and leave a small depression, with a smooth and shining surface. To the under side of the crust adheres a thin pellicle which Wilson declares to be the *rete mucosum*, the film which lies between the derma or cutis and the epidermis; Dr. Neligan, however, considers it to be the epidermis itself. This difference of opinion is owing to a corresponding difference in their theories touching the location of the favous accumulation: the former authority placing it *beneath* the epidermis, the latter *upon* it. In the former case, we must suppose that the overlying epidermis soon desiccates, and thereafter ceases to present the appearance of an organized tissue. Though (notwithstanding the comparative rarity of porrigo in this country) I have had a number of cases, none has come to me at a sufficiently early period of the disease to enable me to form a definite, independent opinion on this point; but I incline to the side of Wilson, for the reason that, as the substance deposited must be originally in a fluid state, did it accumulate on the *surface* of the epidermis, circumstances would sometimes so modify the conditions of the disorder as to make the fluidity of the exudation quite apparent. But authorities unite in pronouncing the formation, in every stage, always perfectly dry, externally.

Wilson observes that "in the early development of favus, it is no uncommon thing to see around the aperture of a hair-follicle a circle of *pus* in place of favous matter." This will issue, in the form of a drop, when the epidermis is punctured. If suffered to remain, however, he states that the collection of pus "loses its characteristic color; it becomes, as it were, dried up, is

no longer recognizable as pus, and merges into the yellow crust of favus." This statement, which must have been based on actual observation, possesses great interest. It not only seems to substantiate Wilson's theory in regard to the *location* of the crusts, but apparently indicates that (in the language of that author) "the same tissue may produce, one while epidermal-cells; another while, pus-cells; and thirdly, favus-cells." The fact also, that the difference between pus and the matter of favus is "more apparent than real," if it may legally be inferred from these statements of Wilson, is an important contribution to the large list of facts which may be adduced by those who favor a *synthetic* mode of viewing the pathology of cutaneous disease. "Pus," says Wilson, "is fluid, from the presence of a large quantity of water; and this dilution with water necessarily alters the color and modifies the development of the corpuscles." He adds, that "favous matter, at its softest, appears in the state of a paste." From this, it seems that what distinguishes the favous matter from the morbid secretions which we have noticed in connection with other cutaneous diseases, is the large proportion of its solid constituents, and its comparative immunity from change. Changes, however, are constantly taking place in the substance of the crusts; and these—which, to be traced at all, must be studied under the microscope—have afforded material for quite an earnest controversy, among men of science, including many celebrated microscopists and dermatologists. I must confine myself to very general terms, in speaking of this dispute, since anything more definite would involve a tedious scientific statement, for which I have here neither time nor inclination. I may observe, that the favous matter is the result of cell-growth, just as much as is the solid part of pus, or of mucus, or the substance of any tissue. Wilson considers it as

"a modification of the elements of the epiderma" or cuticle. Whether this be true or not, the primitive granules of the plastic secretion proceed through the usual forms of aggregation, nucleation, and cellular modification, and the volume of favous matter thus grows, and is constantly fed by the morbid plastic secretion from the capillary vessels of the cutis. As the favous cells proceed upward from the producing surface, and pursue their ceaseless changes, we ultimately find among them an extraordinary formation, having the appearance of a vegetable growth of a low type, consisting of apparent stems and branches, and even a kind of seeds, or sporules. The actual nature of this formation, is the point at issue.* M. Gruby, a distinguished foreign *savant* and microscopist, its first observer, considers it really a cryptogamic vegetable growth, as do Dr. Gustav Simon, of Berlin, and several

* Robin, a celebrated microscopist, having carefully examined the "spongy, friable contents of the favi," reports as follows:—"Reduced to powder, and placed under the microscope, it presents a mixture—1. of tortuous, branching tubes, without partitions, empty, or containing a few molecular granules; 2. straight or crooked but not tortuous tubes, sometimes but rarely branched, containing granules or small, rounded cellules, or elongated cellules, placed end to end, so as to represent partitioned tubes, with or without jointed articulations; 3. finally, sporules, free, or united into bead-like strings. The mycelium is very abundant near the inner surface of the external layer, to which it adheres. The spongy, friable mass of the centre of each favus is principally formed of sporules and the different tubes containing mycelium already described. We often find mixed with them mycelium tubes, but in small quantity. All these elements pass insensibly into each other: empty tubes; tubes containing small round corpuscles; tubes with corpuscles as large as the smaller sporules; sporules placed end to end so as to resemble a hollow partitioned cylinder, with a tendency to separate at the joints; and free sporules." M. Robin also gives illustrations of this parasite, pronounced correct by later writers. Its botanical name is "*Achorion Schonleinii*."

I see nothing in the above irreconcileable with the theory of Wilson and Carpenter. (See further on.)

others. These philosophers are of the opinion that this vegetable growth is the essential characteristic of the disease, which is propagated by means of the mycelia, seeds, or sporules, of the plant, accidentally lodging on the cutaneous surface. Dr. Neligan is also of this school.* On the other hand, Wilson, Carpenter the physiologist, and others, regard the growth as merely a peculiar development of cells composed exclusively of animal substance. Carpenter observes that "their nature must be decided by their chemical constitution; and this, in the case of the *porrigo favosa*," he adds, "appears to be unquestionably animal."

I may say, briefly, that I consider the position of the latter theorists very strong. It is fortified by the results of experience. For, were the theory of M. Gruby and his associates sound, it would establish the *contagious* nature of porrigo, and greatly heighten the possibility of its prevalence. I do not forget that, even granting that the disease is contagious, many favorable concurring circumstances must exist in order that the disease may be communicated; but, after all, the disease is so rare, and even the attempts at communicating it by inoculation have so often failed, that we must consider the facts in the case rather against the theory. †

As would naturally be inferred from the nature of porrigo, the hair is seriously affected by it. Though we may chance to find it apparently uninjured in the earlier stages, the follicles soon become diminished by the presence of the surrounding accumulations; they grow

* This author considers that the investigations of Robin, Gruby, Lebert, and others, on the Continent, and of Dr. Hughes Bennett, of Edinburgh, "place beyond doubt not only that these parasites are developed in certain diseases of the skin, but that they constitute their essential nature." Whether the assumption be not rather too positive, the reader is in a position to judge for himself.

† More is said upon this subject, further on.

more and more shallow and contracted, and eventually, if the disease be suffered to advance, are entirely obliterated. Meanwhile, as the hair is a product of the follicles, it exhibits, in its appearance, the ill effects of deficient nourishment and continued inflammation of the producing organs. In the more advanced stages of the disease, the hair rapidly falls out, and that which remains presents the characteristics which are observed in cases of ringworm. (See the next chapter.) Its internal structure is also to some extent affected, but not precisely as it is in the latter disease. In porrigo, some of the cells, instead of being, as in health, filled with substance more or less solid, contain nothing but air. This is supposed by Wilson to be owing to the evaporation of their contents, which, under the influence of disease, have been deposited in a *fluid* form. When these hollow cells are numerous, they occasion the lightness of color of the hair that is often seen in porrigo, and may even account for the shrivelled appearance which the hairs sometimes present.

Some authors—among them Dr. Neligan—mention the *fatuity* which is generally observed in the advanced stages of porrigo, and regard it as to some extent a consequence of the disease, since it does not characterize the earlier stages. I have not noticed this deterioration; but I may say that the cases I have treated have generally been of recent duration, and the patients have not belonged with that ignorant, poor, and wretched class (more common in Europe) which we may presume to have furnished the majority of the instances that have seemed to justify the statement in question.

Diseases of the scalp, as described by Alibert, Rayer, and other French writers, frequently present features of aggravation that inspire an American reader not only with disgust but almost with incredulity. There are those who look for exaggeration, if not positive falsifi-

cation, in everything emanating from a Frenchman; for my own part, however, I am disposed to regard the statements of these writers as for the most part very faithful and painstaking. The common people of France are noted for their ignorance and want of cleanliness; and these elements of mischief are of themselves quite sufficient to breed diseases, especially of the scalp, horrible to any desirable degree of aggravation. Witness the terrible ravages of Plica in Poland—whence the name, *Plica Polonica*,—where, if the accounts of numerous writers may be taken for truth, the disease assumes a form sufficiently loathsome, one would think, to affect the strongest nerves and turn the best-fortified stomach. Nothing like it is known here; and hence much doubt is thrown over these statements,—which, nevertheless, can hardly be taken justly for wilful fictions. One of Alibert's four varieties of “Porrigine,” *teigne granulée*, is sufficiently disgusting, even to the imagination,* and moreover one may look in vain for a description of it in the works of English authors; yet Plumbe, perhaps

* It is generally confined to the upper and back part of the head. Brown or dark gray crusts, of various dimensions, are seen, looking like “fragments of mortar, or the plaster falling from old walls which have been discolored by damp and dust.” Sometimes they are hard like concrete, resisting the emollient effects of poultices. There are patches of these crusts, and sometimes they are surrounded by numbers of thin scales, dry and furfuraceous. The smell is nauseous, reminding one of rancid butter, or milk which has begun to turn, and any occasional moisture of the parts increases it. It subsides as the moisture evaporates. There is much pruritus of the parts; and when, by scratching or other means, the crusts are detached from the scalp, their sites are observed to be smooth and polished, red, erythematous, and frequently swollen. When this surface is examined attentively, there are perceived, near or on a level with it, small whitish abscesses, whence slowly exudes a viscid, colorless fluid, which, if left to thicken and dry, forms crusts analogous to those which have been removed. Mr. Plumbe's description of lepra on the scalp (when it has extended to this region from other parts) does not differ greatly from the foregoing account of *T. granulée*.

the most fastidious of them all, admits that it is "not uncommon among the children of paupers when first admitted into the parochial establishments." He asserts that it is "only the sequence of an old standing utterly neglected case of *T. favuse*, or *P. favosa*."^{*}

Porrigo, or the *teigne favuse* of Alibert, is not a common affection in this country, or in England, those dermatologists whose practice is most extensive meeting but few cases, and these of a comparatively mild type. It merits attention rather from its inveteracy than its frequency. Though it rarely or never becomes severe enough to threaten vital existence, yet it is very desirable to understand it perfectly, for thus much suffering and infinite annoyance and mortification may chance to be prevented some who have not deserved to suffer thus abominably. The most cleanly cannot consider themselves positively exempt, since some unfortunate conjunction, at a moment when the system is in a state favorable to the contraction of it, may result in the communication of the disease, which will have its way, and run its course, except it be promptly arrested.

Though porrigo more commonly affects children of from three to twelve years, it may occur at any time of life; and the seat of it is not always the scalp, for it

* In the course of the "Preliminary Remarks" with which he introduces his work, this author makes an observation which throws some light on the occasional discrepancies to be found between French and English descriptions of cutaneous disease. "French authors, it will be observed by those who study them attentively, favor us chiefly, if not solely, with the details of observations made on the poor in hospitals. English medical men well know that it is not in such institutions that an accurate knowledge of cutaneous disease, such as it [*sic*] occurs in England, and particularly in respectable private practice, is to be obtained." He adds that even in hospitals and parish work-houses students will "seldom see a case which, with their utmost ingenuity, they can bring to accord with a French description." This seems severe, and is probably rather too sweeping.

occasionally appears also on the back, or (though still more rarely) on other parts of the body. The favous crusts increase more rapidly, and attain a larger size, when the disease seats itself on a portion of the surface not covered with hair.

Cazenave—whose gigantic colored plates, in folio, (accompanied with text) constitute a very valuable work upon cutaneous diseases*—divides porrigo into two species, basing his classification (not as represented by Neligan, upon the difference of form presented by the *crusts*, but) upon the varieties of form originally presented by the *eruptions*, his *favus en cercles* referring to the peculiar arrangement of the vesicles in the disease commonly entitled *ringworm*, and the *favus disseminé* to the disorder described in this chapter under the name of porrigo, or to another disease, resembling eczema *capitis*, or *impetigo*, that is associated with ringworm by Plumbe, under the general head of porrigo, but which would seem to be either one of the two diseases mentioned above, or a later form of porrigo, when pustules have begun to appear, and small ulcers or abscesses have been produced by the inflammation of the parts, the artificial irritation caused by scratching, or the occurrence of a new disease, as eczema, in conjunction with the first.†

As the discussion relative to the question of the contagious properties of porrigo has been so earnest, and is deemed by many so important, I will here review the principal arguments employed on either side. It must

* The "Atlas" which accompanies Neligan's work, though very much smaller, is also a very handsome and useful chart.

† This takes place oftener than many theorists would suppose, and has doubtless occasioned much of the confusion observed in dermatological lucubrations, both in the use of terms and in the diagnoses of the various diseases. A recognition of the fact is of itself a long step forward toward the perfection of the science.

be admitted that the names enlisted for the affirmative are numerous and distinguished. It is just to observe that none of these authorities claims that contagion is inevitable, on ordinary exposure; so far from it, the chances of communication are then deemed but slight. When certain conditions, however, are by accident supplied—though these conditions do not appear to have been thus far perfectly well settled—it is affirmed that the disease is more than likely to be imparted. The opponents of the theory call attention to the rareness of the affection, as a proof that it is innocuous,—at best but negative reasoning, which is readily met with the reminder that the proper receptive state is exceptional, and, when found, must be conjoined with the accidental circumstance of contact with the infected subject, part to part, before the disease can be communicated. This, even admitting that porrigo is contagious, might serve in part to account for its comparative rarity. It is also offered, on the same side, that those who have tried to produce the disease by inoculation—as, for instance, M. Gruby—have failed. This is answered, in part, by what has just been said: inoculation for the small-pox, even, does not always succeed; and besides, while some have failed, others have been successful in this attempt. Remak inoculated his own arm; Bennett, though failing repeatedly in his own person, succeeded perfectly with one of his class,—the method being by inoculation and close contact of the favous crusts, which were obtained from the head of a boy at the Royal Infirmary, who was afflicted with the disease. Neligan, who claims to have seen numerous instances of the propagation of porrigo “from individual to individual, by direct contact,” observes, in relation to these attempts at inoculation:—“now, in all these trials to generate the plant, one important fact connected with the natural history of parasitical fungi has been overlooked by all, namely,

that they require for their growth a peculiar soil; thus we find one genus is found only on snow, another on cheese, another in yeast, different varieties on different decaying vegetable matters, and individual genera and species on various living animals and plants; nay, even different sorts on different parts of the same animal. This holds true with the Achorion Sehonleinii; it requires for its reproduction to be planted in a peculiar soil, that is, on an individual whose system is in a peculiar cachectic condition; and until it is ascertained what this exact constitution is, a single instance of its propagation by contact—and such instances are not uncommon—must be held as sufficient proof of its contagious character.”*

It will generally be found that a bad state of health accompanies this disease, and indeed often precedes it. The digestive organs are evidently disordered, and there are present both fever and irritability. The cellular membrane underlying the scalp partakes of the disorder, being at times so much inflamed as to give rise to small abscesses, which, though they rapidly heal after having discharged their contents, sometimes so affect the secreting organs of the hair that the spots which they have visited remain bald, the follicles having been completely destroyed. The absorbent glands at the back of the head are also affected, being enlarged and tender. Plumbe states that in some neglected cases they “have proceeded on to suppuration,” though he observes that this is by no means common.

A singular method was formerly employed in the eradication of this disease,—consisting in the application of what was technically known as the “pitch plaster;”

* For a discussion of the nature of contagion, the reader is referred to remarks under the head of “Porrido favosa,” in the present chapter.

a portion of the diseased surface being covered with a plaster of Burgundy pitch, ammoniacum, rosin, or the ordinary adhesive plaster, which, after having been allowed to remain for several days, pressed firmly upon the scalp, was then violently torn away, in a direction opposite to that which the hair assumes, thus bringing with it a large portion if not all of the hair of that particular part. The operation was performed successively on every remaining tract of the affected surface. The idea upon which this practice was founded was that the hairs acted as local irritants, retarding if not wholly preventing a cure, and must therefore be removed. It is but just to say that in a majority of instances, if not in all, the remedy proved effectual, the parts quickly healing, and a new growth of hair promptly appearing in place of the old. Unprejudiced persons must see, in the success of the plan, its excuse, and perhaps its justification; and this in spite of the strong language employed by many writers who have seemed to abhor the practice on account of its "cruelty" and almost "barbarity." Such as claim to possess an equally certain (it could hardly be a more prompt) method of treatment, which does not involve the removal of the hair, may well inveigh against what they are pleased to consider a cold-blooded and heartless experiment; but it should be remembered, first, that the practitioners of those days knew no other effectual mode of arresting the disease, which was then not only commoner than now, but often more aggravated; secondly, that owing to the influence of the disease, the hairs upon the affected part possessed comparatively but a slight hold on the cutis, so that the pain, in many instances, was not so severe but the patients were willing to have the operation repeated; thirdly, the mode was *successful*. Plumbe becomes so earnest on this point as to be really eloquent, at times, for he feels that with

such a weight of authorities against him, there is need of more than common force and cogency in his argument. "In this tedious and troublesome form of disease," he observes, "we have not a choice of remedies; fortunate, indeed, may it be considered, that one should be known capable, if properly directed, of subduing it, or one principle of treatment found to be generally beneficial. The offensiveness of its external appearance, its seat being a part constantly exposed to observation; the total destruction of the chief ornament of the countenance, the hair, which it occasions; the horror entertained of contact by every person, together with the exclusion from places where education can be best obtained, make the majority of cases truly pitiable. It is for those who know not the distress and misery which tedious cases excite in the minds of sensitive parents, to speak unheedingly of the *horrible torture of extracting the hair from the diseased parts* as a means of cure. In truth, they must know very little of the mode in which this ought to be effected, and of the slight degree of uneasiness attending it, to think it improper or inefficient."—His plan is to clip the hair pretty close with a pair of scissors, and then to apply poultices, to promote free suppuration around the roots, thus weakening their connection with the cutis; afterward, with a pair of forceps broad at the point, the hairs may be extracted very readily, and with little or no pain to the patient. This, combined with the application of some cooling lotion, and the employment of remedies designed to improve the general health, is all he considers necessary, in the treatment of the disease in its advanced stages; and certainly the system must be admitted to be simple, and is apparently as harmless as it is effectual. So much for this singular controversy: from which may at least be deduced the conclusion that the older practitioners were perhaps, after all, wiser and more

innocently practical than they are represented to have been.

In the hospital of St. Louis, at Paris, where were many patients afflicted with porrigo, some of them, in despair of a cure from the regular system, would of their own accord have recourse to a kind of plaster termed the "calotte," made of strong vinegar, rye meal, and pitch, which they spread while hot and applied to the whole head, as though it were a cap. At the end of three days they tore it off violently, of course removing the hair from sound and unsound parts alike, and thus cured themselves of the disease. Had the sufferings of any of these poor wretches been very terrible, in the operation, it is not likely that others of the afflicted would have followed so fearful an example. It is probable that the attachment of the hairs to their sheaths was rendered so weak by the emollient action of the plaster, that the uprooting of the hairs was an operation at least endurable—perhaps almost painless.

M. Alibert, himself strongly opposed to this method of curing porrigo (perhaps for the reason that it savored of quackery), mentions a man, ignorant of medicine, who really cured the disease, by the use of a certain secret topical application, of which, he discovered, by ingenuity or accident, that lime constituted one of the ingredients. "The fallen hair," he says, "was replaced by more, first of a pale, then of a deeper color. *The disease was cured.*"

Many other powerful topical applications have from time to time been employed in the treatment of porrigo,—such as ointments containing arsenic, pepper, quick-lime, etc., or caustics, blisters, and their like. The disease, however, may be cured without a resort to any of these violent measures, or to the practice of uprooting the hair. (See "Treatment.")

Porrigo rarely, in children, survives the age of pu-

berty, disappearing spontaneously, in the greater number of instances, before that epoch. But the amount of irreparable mischief it may inflict before that consummation, which of itself is in no case certain, should warn parents never to trust to this possibility, or to indulge the treacherous disease a moment longer than is absolutely necessary.

PORRIGO FAVOSA.*

This affection, termed by Bateman and others the "Honeycomb-scall," and generally (though erroneously) included under the head of Porrigo as a variety of that many-hued disease, is characterized, at the outset, by the eruption of distinct large whitish pustules, which are soft, itching, and somewhat inflamed at the base. On the scalp, they generally first appear at the sides or back part of the head; soon breaking, they discharge a quantity of thick, viscid matter, which gradually concretes into irregular semi-transparent scabs of a brownish or yellowish color. Fresh pustules appear, pursuing a similar course, and the area of the eruption not infrequently extends till it has included the whole scalp. The discharge grows so copious that the whole tract is kept moist, and the hairs are matted together; in some parts the pustules maintain their distinctive character, while in others they become confluent, and thus create vast ulcerous sores; pediculi are sometimes engendered in vast numbers, and a sour, rancid vapor rises from the diseased surface, offensive to the smell and sometimes pungent enough to affect the eyes.

"In removing the scabs of this disease," observes Plumbe, "whether existing on the head, or other part, we discover a reddened and inflamed surface, pouring

* See "Eczema."

out, with excessive rapidity, a viscous, transparent fluid, which speedily dries and forms fresh scabs of various shades of color, from a transparent yellow to a dark brown. An areola of inflammatory redness usually surrounds the part, as if the whole energies of the vessels of the diseased spot and adjacent cutis were called forth in keeping up the fluid secretion. . . . This state of matters," he adds, "will be constantly found whenever the scabs are removed; in doing which, a small quantity of blood sometimes flows from the surface. The fluid secretion, however, at no time (*except where constant irritation is kept up by picking the scabs*, which children are accustomed to do) appears like pus; for it is not opake, nor does its chemical analysis afford similar results. The surface is not ulcerated, but merely abraded; the fluid . . . being poured out from the open mouths of its vessels."

The exception which I have emphasized above is worthy attention. If Mr. Plumbe's position be correct, we must assume that the irritation of scratching is sufficient to produce symptoms of a *new disease*,—a conclusion to which I am not inclined. I am rather persuaded to think the fact mentioned an argument for the substantial identity of pus and the vesicular matter of the original eruptions,—and this in spite of the "chemical analysis" to which he refers. For further observations on this point, I refer the reader to the chapter on "Eczema."

The author lately quoted declares *P. favosa* to be contagious, and says it is not uncommon to see several children inoculated from one, "around whose mouth one or two pustules may have appeared, and the contents have been applied to the lips and cheeks of its brothers and sisters, in kissing them." He adds that the "breasts of the nurse are not infrequently inoculated in the same manner." There are several considerations

bearing upon this point; first, has it ever been made clear that any of these cases which afford reasonable evidence of inoculation were really such as would come under the head of porrigo *favosa*,—particularly at the outset? May they not have been cases of sycosis? Second, admitting that the disease was *P. favosa*, does it follow that it was not spontaneous in each individual instance? Having a constitutional origin, it might appear in all the children of a family, or a number of them, at very nearly the same time; for often, in constitution and temperament, as certainly also in their manner of living, they are quite alike. The irritation of the morbid matter might produce an eruption on the breasts of a nurse, but is it *P. favosa*? Third, is *infection*, or the transmitting of a disease by contact with the affected part, to be ranked with *contagion*, which includes also the communicating a disease by means of the miasmata proceeding from the sick person? It is this latter which makes a disease dreadful. Fourth, is infection really so rare an incident? Has it ever been satisfactorily proved that an ordinary case of eczema is not infectious, under favorable circumstances?* My own observations warrant me in returning an emphatic No to the last question.

In some cases of *P. favosa*, as also of true porrigo, small red tumors appear among the pustules, usually in the later stages of the attack, and exhibit peculiarities which give them a distinctive character. Before bursting, they not infrequently desquamate at the summit, and proceed leisurely to suppuration, the substance discharged being sometimes healthy pus, and at other times more like the curdy product of a scrofulous abscess. Sometimes large abscesses form in the region of the occiput, in consequence of inflammation extending to the glands;

* See chapter on "Eczema."

and when this happens, the new eruption quickly causes the disappearance of the old. The reader is referred to the chapter on "Eczema" for my views of the nature and position of porrigo *favosa*, and also of the following disorder.

PORRIGO LARVALIS.

This disease is the *teigne muqueuse* of Alibert, and is variously termed impetigo *larvalis*, *crusta lactea*, etc., by other writers; it is known to the unlearned as the tooth-rash. Alibert's "*genre premier*" of the "Dermatoses Teigneuses" (before-mentioned) contains a division named "*Achore*," of which he makes two species, l'*Achore muqueuse*, and l'*Achore lacteumeux*, from which the general title "*Teigne muqueuse*" has been compounded, to suit the views of later writers, who can see no marked line of distinction between the species. It is an affection peculiar to infancy, and resembles greatly the favous porrigo just described. It also bears a general resemblance to impetigo.* It would not be unreasonable to regard impetigo, *P. larvalis* and *P. favosa* as varieties of a common disease, characterized variously by secretions of the vessels of the cutis more or less extensive and active excitement, or by chronic inflammation, dryness and scurfiness.† Dr. Armstrong, in his work *On the Diseases of Children*, styles the disorder under consideration "tooth-rash,"‡ as it appears very commonly during the period of teething. The term, though suggestive, is hardly philosophical. Mr. Plumbe, in one portion of his work,§ denominates it impetigo *capitis infantilis*; but I do not observe that

* See chapter on "Eczema."

† Idea suggested by Plumbe.

‡ Dr. A. says of this disease, that it sometimes spreads over the entire body, and appears very much like scabies. "Sometimes it is confined to the head and face, putting on the form of large scabs or blotches, a good deal like the small-pox just after they are turned."

§ At page 136.

he elsewhere repeats the term. The disease is more commonly incident to the children of the very poor. This is not because of insufficient nourishment, for it is the strong and healthy and hearty children that are attacked most actively; but probably bad air, a bad system of diet, *repletion*, and uncleanness have, one or all of them, something to do with its origin.

The disease, though it commonly appears first on the forehead, sometimes originates on the hairy scalp: in which case, according to Willan, it is generally preceded by *pityriasis capitis*, which may have continued for several days or weeks.* It also, in other cases, may be first observed on the chin, or cheeks, or on the temples, or about the ears. "Wherever the disease commences," says Willan, in his admirable description, "it usually extends, in the course of two or three months, to all the parts above-mentioned, and likewise to the neck or breast, so that the whole face looks as if covered with a vizor." It was this eminent physician who first applied to it the name it now bears. Though so well-known, and so very common, I deem it proper to append a brief account of it, taken from Willan's treatise.

"The porrigo *larvalis* generally appears first on the forehead, in minute pustules with a whitish point, set

* See chapter entitled "Pityriasis." Plumbe observes that pityriasis "seems more frequently, when terminating in a form of disease more severe than itself, to be followed by confirmed *scalled head*, or a state resembling the advanced stages of *ringworm*. . . . There is no question," he continues, "as to its frequent appearance in conjunction with pityriasis, because its constitutional causes are as liable to exist where the latter has established itself, as where the scalp is free from disease; but it is only on the principle of local irritation that the former can act as a cause of any other affection, even on the scalp; and it can by no means produce a disease so evidently of constitutional origin as P. *larvalis*."

close together, and producing a redness and inequality of the surface, attended with considerable itching. The pustules break in a few days, and discharge a clear, viscid humour, which gradually concretes into thin yellowish scabs. From beneath these a discharge of fluid takes place, from time to time, and forms additional layers of scabs, of a brown or blackish color, till the forehead is completely incrusted. The scabs are in some places thick and rounded, though not very compact; in others thin or laminated, and loose at the edges. They do not separate at regular periods; if any of them be detached, the surface is presently covered by a new incrustation. The scab is alternately dry and humid. Sometimes from a fresh eruption of the pustules, or from other circumstances, the discharge becomes on a sudden so profuse, that all the surface is laid bare and remains for several days in a state of ulceration, emitting a thin, viscid, and acrimonious fluid from innumerable pores. Very young infants are most liable to be thus affected, and they suffer extremely from pain, itching, and irritation, when the complaint is extensive. On the cessation of the discharges, brown or blackish scales gradually form again, and cover the ulcerated part. When the disease is about to terminate, the scale becomes dry, and sometimes whitish, and at length falls off, leaving a red, shining cuticle, indented with deep lines, and very brittle,—hence it cracks and exfoliates, and is renewed perhaps three or four times before it acquires the usual color and texture. . . .

“The fluid which perpetually distils from among the scabs diffuses a rank, unpleasant smell, and is very acrimonious, for it excoriates the adjoining parts where no eruption had previously appeared. . . . Although the eruption may commence in any of the situations above-mentioned, yet it seldom remains long without affecting either the hairy scalp, the forehead, or some

part of the face, where it finally settles.* All the symptoms are milder in children somewhat advanced than in infants not a year old : there is less itching and irritation, and the discharge from the pustules is not so considerable ; the scab or incrustation is also drier and less extensive."

The acute and discriminating Plumbe, who regards *P. larvalis* as depending essentially on repletion of the system, observes that "the common occurrence of glandular affections in conjunction with it should never be suffered to lead us to the notion of its analogy to diseases identified with original debility of the constitution ; for it is well known that irritation of the cutis, even of the slightest kind, is capable of effecting mischief in every gland in its neighborhood, and the occasional enlargement of the mesenteric glands only occurs as a consequence of the continuance of the irritation of the disease and the fever and debility induced by it."†

That repletion must be a very common state of the in-

* "The disposition to settle on the scalp, according to the language of Dr. W., which is manifested in most instances of this disease, is merely the consequence of the irritation of the hair on the diseased surface and the difficulty it affords [the opposition it presents] to the removal of the scabs and diseased secretions."—*Plumbe*.

† This author also observes : "It has been considered an extraordinary circumstance, that even in the worst cases of *P. larvalis*, where the disease has extended over the whole scalp and face, no marks or seams of the skin should remain on the part after recovery : an attentive observation of the pathology of the disease, however, fully explains this, as the discharge is only poured out from the mouths of the irritated vessels, on the surface, without the production of ulcerative absorption. When the cuticle is first elevated and broken by the pustule underneath, a copious discharge takes place, not only on the particular point which the latter occupied, but the vessels surrounding it partake of the diseased action, and a more extensive surface of secretion is thus produced : were this not the case, the quantity of discharge would be considerably more limited."

fant body, is evident to every one. The essence of good care, in a large number of cases, would seem to consist as much in perpetual feeding as in the avoidance of drafts. Why, under such circumstances, eruptive diseases are not more common with the little ill-treated things, is a marvel, only surpassed by that other marvel, how so many children, in spite of the ignorance and stupidity of their parents, and their own foolishness, involving a constant succession of perils and close contact with death, ever grow up to be men and women ! What are thought to be perils, however, may now and then be providences : thus, a mother on beholding a large portion of the surface of her infant's body exhibiting active eruptions, sometimes intractable enough, and the incarnations assuming various ominous appearances, may very naturally feel alarm, and consider the chances of the child, in the struggles of nature for continued existence, as very materially diminished ; whereas, it is more than probable that but for these alarming symptoms, the child would die,—a victim of ignorance and folly on the part of its protectors.

PLICÆ. (PLICÆ POLONICA.)

As no disease with this appellation is observed in this or any other civilized country, I shall devote to it but a limited space,—deeming that its foreign renown has earned for it the right to at least a brief mention. Perhaps, considering rather the *nature* of the disease than its *name*, it is, after all, as well known to us as some other of the rare cutaneous diseases ; for, taking the best accounts of it as our guide, it in some respects strongly resembles porrigo *favosa* ; indeed it has been regarded, by at least one observer,* who has treated

* Mr. Plumbe.

some cases of the latter, occurring among the poor of England, as identical with that disease. I do not know upon which of the various descriptions of pliea this identity was predicated; certainly not upon the one whieh was popular with the earlier writers and was based upon the statements of M. de la Fontaine, Surgeon to the king of Poland, who published an account of it in 1792. According to this author it is "one of the most formidable, disgusting, and fatal" of diseases. "It is eontagious, and often congenital; its causes are constitutional, and its effects most destructive. Cured with the utmost difficulty, and, when cured, often followed by more formidable disease, requiring *a reproduction, by inoculation, of the original disease*, to save the life of the patient." Several years subsequent to the publication of M. de la Fontaine's work, another was issued by Baron Larrey,* who had personally studied the disease among the poor of Warsaw; and in this counterblast we get a very different view of pliea. The Baron came to the conclusion that it was a local faetitious disease, caused by neglect and bad regimen; he deelared it to be non-contagious, and, where prejudice and quackery were dispensed with, easily cured by attention to cleanliness. Dr. Chamseru, an army physician of equal experience, sustained Baron Larrey. Not long after this, M. Alibert, who had given attention to the subject, favored the world with 108 pages oetavo upon it, under the plural head of "*Plicæ*," characteristically dividing the disease into species, and subdividing these into forms. The first point of interest in M. Alibert's work (relating to the purpose of this sketch) is an attempt to reeoncile the widely discrepant views of the authors just alluded to; and this

* Mémoires de Chirurgie Militaire et Campagnes, de D. J. Larrey. Paris, 1813.

he accomplishes very plausibly, observing that there are “two forms, the true and the false plica;* the one, as Polish physicians declare, is of constitutional origin, and a serious disease; the other is produced by excess of dirtiness, has no constitutional origin or connection,—and this is the plica of which Larrey and Chamseru speak. The Polish physicians apply therefore as a distinction, the terms *benign* and *malign* to the two different forms.” I am inclined to consider this statement as entitled to respect. Otherwise, and if the Baron Larrey and Dr. Chamseru have really exploded what was only an old woman’s notion, why should the University of Wilna have offered a prize† for the best essay upon plica; and how did the oft-repeated, minutely-particular, and painful accounts of the disease originate? And what motives could have prompted M. de la Fontaine to fabricate the descriptions, professedly based upon actual observation, which he gave to the world with such a solemn parade of scientific accuracy?

The plica regarded as identical with *porrigo favosa* by Mr. Plumbe,‡ is evidently that of Messrs. Larrey and Chamseru; though certain details of the latter disease, in its more aggravated shape, would do no discredit to the true plica of average severity, as described by M. Alibert. This false plica (the “benign” species of the Polish physicians) is described by Dr. Copland as being essentially a felting or matting of the hair, the result of neglect, and favored by a morbid secretion from the scalp. He says that females in Poland and the adjacent countries are subject to it after long illness; and observes that it is sometimes met with “in connection with *porrigo favosa*” (which of course he regards as a dif-

* This fact has been generally recognized, and will be further illustrated.

† In 1806. ‡ Who is obviously sceptical of the other variety.

ferent disease), and that it is sometimes confounded with true plica. It is evident, from the foregoing, that this judicious writer has embraced the views of M. Alibert. This is further apparent from the large space subsequently devoted by him to a description of true plica, which he characterizes at the outset as an “anomalous development and agglutination of the hair.” This definition is obviously faulty, as will appear from his own detailed accounts; unless indeed we are to regard the accompanying abnormal condition of the *scalp*, and the general state of the system, as phenomena pertaining to some other co-existing disorder. This I am willing to grant, in many cases, or even to consider the disease as but a variety of porrigo *favosa*, peculiar to districts like those of Poland where it chiefly abounds, and to persons whose mode of life resembles that of the unhappy wretches to whom it is chiefly incident. That those regions *are* peculiar, is abundantly evident; and that the habits of the class who suffer from plica are sufficiently provocative of exasperating cutaneous diseases, is equally clear.* In our own country, the most loathsome forms of cutaneous diseases are almost uniformly found among those whose habits are the furthest removed from rationality and decency; and in France, where the very

* It is said to prevail chiefly in damp, marshy localities, along the banks of the Vistula and Borysthenes. The habits of the Polish Jews, who are its favorite victims, are such as would justify even the plague, if the accounts are trustworthy. Thus, they live chiefly on salted meats and raw spirits; dirty habits are chronic; the custom of combing, washing, or brushing the hair is hardly known among the poorer classes; they wear warm fur or hair caps a large portion of the time; live in small, filthy, crowded rooms, in which are kept also the whole list of domestic animals; in short, they are about as beastly as the meanest of the animals with which they so freely associate. After this, the earlier accounts of Plica Polonica seem more reasonable. It is said that the disease is wearing out; and this may be owing, in part at least, to the improved habits of the people.

poor are so much more debased than similar classes here, we naturally look for cases such as fill the pages of Gallic writers.

The description which it is natural to regard as most reliable, is that of Dr. Copland. He treats the disease at considerable length, and would appear to have very thoroughly digested the accounts of the French authors, though this very faithfulness may suggest the idea of greater credulity than could have been wished,—an idea which is somewhat strengthened by his garrulous style, his parade of names, and his general prolixity. The brief description which follows is based mainly upon that of Copland,—upon whom it is desirable to fatter the responsibility of over-statement or positive error, should such defects, at some future period, be laid at its door.

Indications of plica are sometimes observed to follow an attack of acute fever, which has been characterized by “ languor, pains in the limbs and head, vertigo, an invincible disposition to sleep, rushing noises in the ears, pains in the orbits, injection of the conjunctiva, coryza, and sometimes clammy sweats.” The fever is occasionally attended by an eruption on the skin, or at least a redness, and also by an offensive perspiration. It is stated by M. Lebrnn, Dr. Marcinkowski, and Brière de Boismont, that plica “ may occur in the course of an acute or chronic affection of the brain, or of the viscera of the chest or abdomen;” and that “ although it often is observed in the young and robust, it always is preceded and attended by more or less febrile or internal disease.” These authors are also of the opinion that it is generally critical—that is, not idiopathic (original),—and proceeds from a cachetic* state of the constitution, developed by the complaints above mentioned,

* Cachexia is a depraved condition of the body; a bad habit.

aided perhaps by the "peculiar habits and eireumstances" of the patient. M. Jourdan, and others, however, declare it to be *both* primary (idiopathie) and eritical, and that in the first-named form it "appears suddenly or in a short time, attended by severe pains, resembling those of rheumatism or gout; in the second, it supervenes slowly, in the advanced course of various affections different in nature and character, but generally accompanied with viscious [viscous?] perspiration of the head. The sealp is most commonly or chiefly affected, but the hair in other situations, and the nails, are frequently also implicated. . . .

"The sealp is sore to the touch, excessively sensible and itchy; a clammy, offensive sweat exudes from it, and agglutinates the hair, which loses its lustre and appears thickened, softened, or distended, by a glutinous fluid of a reddish or brownish color. This fluid is produced at the extremities of the bulbs, and is transmitted to the ends of the hair. A peculiar offensive smell attends this exudation from the hair and scalp. The hair is matted or agglutinated in different ways; sometimes in single locks of varions thickness and length, resembling ropes: male plica,—plia *multiformis*. Occasionally the hair is stuck together in one mass or cue: plica *candiformis*; and in other instances it is felted into a mass or cake of various sizes: female plia.* The hair of the head, pubis, and axillæ, may also present similar appearances. When thus diseased the hair often aquires a great length. Instances of its reaching the length of some yards are adduced . . . The surface of the sealp is often covered with superficial ulcerations, or with incrustations formed by the morbid secretions; and numbers of pediculi are frequently seen in

* These distinctions, so absurdly trivial, must be the work of M. Alibert, the most pertinacious of nosologists.

this and in other parts of the body. The nails of the hands and the feet commonly become long, hooked, yellowish, livid, or black. . . .

"Meckel injected the scalps of two persons who died with plica, but none of the injection reached the bulbs of the hair. J. Frank and La Fontaine found the hair-bulbs much enlarged, and full of a yellowish glutinous fluid; Gilibert also observed them distended by a dark foetid matter. Schlegel states that the hairs are enlarged and filled with a yellowish brown fluid; and Rolfinch and Vicât say that they are frequently so distended with this fluid as to burst, and to discharge it externally. Similar changes have been observed by Gase and others. M. Blandin remarked the bulbs to rise above the level of the skin, within the infundibiform cavity of the root of the hair, as the papilla or bulb of the feather elongates and produces the quill in the young bird. (Rayer.) M. Sedillat found, on examining trihomatous hair with a mieroscope, the internal canals much larger than in healthy hair, and the cellular cavities near the canal much more distinct than usual. That the hair neither bleeds when divided, nor is sensible, has been shown by Boyer and others. The morbid sensibility attending the complaint is seated in the scalp and hair-bulbs.

"This malady appears in the human species primarily, and it is said also to affect the lower animals; but there has been no proof adduced of its transmission from the former to the latter. It has been supposed to be contagious, but this opinion has been shown to have been unfounded."*

Schlegel imputes plica chiefly to damp residences, and the use of semi-putrid fish. Other supposed causes

* It would be interesting to know who has shown this; but Copland has omitted to mention his authority for the statement.

have already been mentioned; and to these may be added (the whole being taken for what they may seem to be worth) the application of warm emollient dresses to the scalp, with the view of provoking a critical discharge, in order to relieve the pain occasioned by rheumatic and other affections of that region.

Plica is thought by M. Jourdan to consist in "an increase of the vital functions of the bulbs of the hair and of their secretions, with augmented sensibility." It is imputed, by various writers, to the presence, or effect, of various diseases; and many agree in the general idea that it may be considered a critical discharge, determined to the hairy scalp by various causes, single or concurrent. But a larger number of the more careful writers, however, consider it as *sui generis*, and as seated essentially in the bulbs of the hair.

It would be idle to extend this account, though the material is abundant. Let it suffice in conclusion, to say, that many of those who are subject to plica are said to regard its advent as a favorable if not providential occurrence, and to endure its terrors with great fortitude; and that in the more aggravated cases, where a compact loathsome mass is aggregated on the scalp, it has been considered unsafe to remove it, and it has therefore been permitted to remain until the continued growth of the hair has slowly raised and separated it from the surface.

PORRIGO FURFURANS.

Tinea Furfuracée. T. Amiantacée.

Both Willan and Bateman were of the opinion that this disorder is a species of porrigo, as described by them,*—which, in its later manifestations, *P. furfurans*

* The porrigo of these authors is not the true porrigo, but an affection of an eczematous nature.

sometimes strongly resembles. The suffix (probably after Alibert) refers to the appearance of the small whitish scales which characterize its earlier stages. These scales are furfuraceous, of variable but always appreciable thickness, sometimes so dry as to fall away or be detached with ease; at other times (it may be a later stage of the same case) they are more or less damp, from a viscous and foetid discharge which causes them to adhere to the hair.

This is the *T. furfuracea* of M. Alibert, and one of the four varieties into which he divides "Porrigine" or porrigo. It is more common than the famous porrigo previously described, and chiefly affects young children,—cases occurring to those past seven years being very rare. It begins with a trifling desquamation of the cuticle, sometimes dry, and sometimes accompanied by a gradual issue of ichorous matter, which dries into the scales above mentioned, and would seem to be a different substance from the viscous one which attaches the scales to the hair: one being probably a morbid product of the sebaceous and the other of the sudoriparous glands, both of which are liable to be excited to undue action by any irritation or inflammation of the contiguous region. Much pruritus of the affected parts usually attends the progress of the disease, which slowly spreads until it includes the greater part of the scalp, and indeed often exhibits itself on the forehead, where it is seen advancing its crusts from beneath the hair. The edges of the crust are sometimes exceedingly white, and it resembles bran gummed into a mass, in various stages of dryness, with some sticky substance. If the crusts be raised, their under side, and the surface from which they have been detached, will be found moist with the viscous discharge before spoken of, which has an odor resembling that of sour milk, and is vastly increased, at various points, by small ulcerations. When

the scalp has been carefully relieved of the accumulations lately described, it is found to have lost its cuticular portions,—revealing the pinkish hue of the cutis, the surface of which is smooth, polished, and shining.

The nature of *T. furfuracée* is manifest. The vessels of the cutis that elaborate the epidermis, being excited to morbid action by inflammation, more or less violent, of the surrounding parts (which in infants and young children are peculiarly subject to it), no longer evolve a perfect material, but something less consistent though of the same elements as the perfect cuticle; and this product of morbid action, by its constant though perhaps slight exfoliation,* announces the more violent symptoms of the disease,—the itching, the several exudations, the scurfy crusts, etc.,—which evince the extraordinary activity of the glands of the affected parts. The attack of inflammation being acute, the latter vessels (obedient to the slightest change) have been spurred to great exertions; and while they have been successfully performing their part of emunctories to the morbid matter in the system, they have so far exhausted the force of the local inflammation that although the scalp may have been temporarily deprived of its cuticle, no injury has resulted to the cutis, the vital apparatus of which is ready to resume the secretion of cuticular substance so soon as the irritation of the parts shall have sufficiently subsided.

Should the inflammation, mentioned above as originating the disease, instead of being active and violent in its nature, partake of a chronic mildness and inveteracy,—a condition to be looked for where the skin naturally possesses but little irritability,—the earlier symptoms of

* To which should doubtless be added more or less of the product of inspissate sudoriparous secretion.

the disorder would continue prominent, the glands remaining but slightly if at all affected; no pustulation or ulceration would appear, and little or no fluid discharge would take place. The symptoms would thus be reduced to a chronic exfoliation of imperfectly-formed cuticle, in minute dry scales: and would constitute the outward sign of a disease termed, by M. Alibert, *Teigne amiantacée*, or "Porrigine amiantacée," another of the frequently mentioned four varieties of the Porrigine of that author.

But it would perhaps be unphilosophical to insist that the two are but different manifestations of the same disease, although cases might be instances in which one had succeeded the other; for the symptoms of constitutional derangement, so apparent in the *T. furfuracée*, it is plain are wanting in the other. A theory on which an identity more or less nearly perfect could be predicated would be one which should consider the cuticular exfoliations and the glandular discharge as symptoms of two different diseases,—a fancy which may after all be true, and would not be singular if it were.

"The *teigne amiantacée*," says Alibert, "does not form crusts, but shining silvery scales, which, by their concretion, harden and unite the hairs nearly their whole length in parcels, and its silky and delicate appearance gives it a resemblance to asbestos. It generally occupies the upper and fore part of the head, and is particularly characterized by very small fine scales of a silvery or mother-of-pearl appearance, which, surrounding the hair, does [do] not a little resemble that thin transparent pellicle with which the feathers of young birds are surrounded when they are first hatched. When the hair, thus hardened with this sealy substance, is cut off with the scissors, the skin appears furrowed; it is red and inflamed, but less so than in the *T. furfuracée*. The itching sensation is inconsiderable, and as the diseased parts are

usually destitute of moisture, no unpleasant smell is emitted."

Mr. Plumbe observes that "the sheath which the cuticle gives to the hair a little beyond its exit from the scalp, and which is, in a healthy state, almost transparent and scarcely perceptible by the naked eye, becomes, by this chronic inflammation of the vessels producing it, more rapidly elongated upon the hair; it grows dry and harsh, and gives to the hair near its root a shining silvery appearance resembling the fibres of asbestos; and hence Alibert has given it an extraordinary designation." There is a discrepancy between these two statements, from which it would appear that Mr. Plumbe has either misapprehended the meaning of M. Alibert, in relation to the point on which the latter has founded the title of the disease, or has meant it to be inferred that the "dry and harsh" appearance of the exaggerated sheath of the hair is owing to its having become disintegrated into scales, in the process of its morbid growth,—in which latter view the discrepancy disappears.

Both ringworm and porrigo* are liable, when long neglected, or mismanaged, to terminate in *T. furfuracea* or *T. amiantacea*. In their earlier stages the vessels which secrete the cuticle are comparatively unaffected by the inflammation of the surrounding parts; hence but little of the peculiar seurf of *T. furfuracea* is formed. But they at length begin to exhibit the usual signs of excitement; and eventually large quantities of weak and nerveless enticle are produced, suffering perpetual exfoliation, and mingling with the odious effusions of the original disease. To these effusions they contribute a glutinous property that very much enhances the difficulties encountered in the treatment of the disorder. As the first symptoms subside or become ameliorated

* As described in the earlier part of this chapter.

through a resort to cleansing operations, the new disease gathers strength, taking the form either of the *T. furfuracée* or the *T. amiantaeée*, as the exudation from the enlarged passages traversed by the hairs is more or less copious.

The fact of such successions as are mentioned in the foregoing paragraph being more or less common, affords an apparent justification of my arrangement of these two diseases of M. Alibert under the general head of Porrigo, as was the custom in the days of Willan and Bateman. I have however thus disposed them chiefly for the sake of convenience: their true place, according to relationship, I think is under the head of eczematous affections. The reader is referred to the chapter on "Eczema" for the reasons which have influenced me in thus deciding. In the times to which I have alluded, the term "Porrigo" was a very general one, and was conveniently made to suit a large number of affections, some of which, as the reader has seen, possess but little in common.

It may be added, in conclusion, that the *P. tonsurante* of M. Alibert (the fourth of his divisions of "Porrigine" or Porrigo), is but another term for the *P. decalvans* of Willan, or the Alopecia of modern writers, and is not so much a disease in itself as it is the *result* of disease, or at least of a departure, more or less wide, from the normal state of the healthy system. It is fully treated in its proper place.

TREATMENT.

Porrigo.

Dr. Neligan's system (which he declares to be uniformly successful) is, in brief, as follows:—"It consists," he observes, "in the simultaneous employment of constitutional remedies and local applications; the former,

used with the intention of correcting or altering that vitiated condition of the system generally to the existence of which is due the development of the morbid growth on a congenial soil; and the latter, to remove the diseased mass constituted by the peculiar vegetable parasite, and to prevent its reproduction." A combination of the two alteratives, arsenic and iodine, is the main feature of the constitutional treatment,—given generally in the solid form, as follows:—

B. Arsenici Iodidi.....	gr. j.
Mannæ duræ	gr. vj.
Mucilaginis quantum sufficit ut fiant pillulæ duodecim.	
"One to be taken three times a day."	

This is continued for a long period, the dose being increased very gradually. Should headache, and dryness of the mouth and fauces be complained of, in the course of five or six weeks' use of this preparation, it is discontinued for a few days, and then resumed. "In decidedly scrofulous children, the administration of cod-liver oil simultaneously with that of the iodide of arsenic is attended with the best effects, and in cases in which from any cause arsenic may disagree, iodine may be given dissolved in the cod-liver oil in the proportion of the twelfth of a grain in each fluid drachm."

The local treatment corresponding with the above is substantially this: The hair is cut close; a large linseed-meal poultice is applied to soften the crusts, and sometimes repeated; then the head is well washed with a strong carbonate of potash lotion (a drachm to a pint of distilled water) and softly brushed; "the scalp is then covered with the carbonate of potash ointment (a drachm to one ounce of prepared lard and a fluid drachm of glycerine) spread on lint, and over it a closely-fitting oil-silk cap is placed; the ointment is renewed twice daily." This removes the incrustations in

two or three days: then an ointment is used, composed of half a drachm of the iodide of lead to an ounce of prepared lard, renewed morning and evening, previously washing the head with the carbonate of potash lotion. If the ointment after a time excites inflammation, it is discontinued for a day or two, and then resumed. "After this first attack of inflammation disappears it rarely recurs again, although the use of the ointment be persisted in for months." At the end of a fortnight the strength of the ointment is increased, and, in case the disease reappears, even doubled. The oil-skin cap is kept on till a cure is effected. After three or four weeks, the treatment is suspended and the hair permitted to grow. If the fungus do not revive, the cure is complete. The diet during treatment consists in milk and the farinacea. The bowels are duly regulated.

Mr. Plumbe's treatment of the variety of porrigo corresponding with that to which the generic title is applied is embraced in the following passage:—"The state of the general health will, in most cases, require the first attention, and the local applications will be such as are most [best] calculated to subdue irritation and promote cleanliness; to remove as speedily as possible the contents of the ruptured pustules, and prevent their drying on the part and matting the hair together, and thus increasing the local mischief. These measures," he observes, "constitute nearly all which can be done in the shape of local applications." He considers the complete removal of the hair from all the scalp, by means of finely-pointed scissors, as "almost always requisite," as a remedial and preventive measure. "When this has been accomplished, the best applications for the first few days will consist of ablutions by water, heated to the highest degree which the patient can bear with comfort." These, repeated several times in the day, are recommended both for cleansing the

scalp and for subduing the irritation of the parts. Mr. Plumbe's internal treatment offers no peculiar features.

I have frequently found the following preparation very useful in the earlier stages of porrigo:—To one ounce of the fresh green leaves of the Plantain (gathered when the plants are in the most vigorous condition), add six ounces of alcohol and an equal quantity of soft water; let the mixture stand the usual time required for tinctures; with this tincture unite an equal quantity of the tincture of Burdock leaves, made in the same manner: saturate the scalp four or five times in the day with this preparation, until an improvement is perceptible, when gradually diminish the frequency of the applications.

When the disease is well seated, the following remedy will be found of sovereign efficacy:—To four ounces of a strong tincture of the inner bark of the Wild Cherry, add an equal quantity of a tincture of equal strength made from the root of the Upland (or "Bob") Sumach. Apply as directed for the previous remedy. No other treatment, topical or constitutional, is necessary, in ordinary cases of porrigo.* I am aware that these remedies appear almost ludicrously simple and humdrum, by the side of the learned array of preparations which the faculty are in the habit of using. The best criticism will of course come from those who have witnessed the operations of both systems.

Porrigo Furfurans. (Dry Scall.)

W. C. Dendy uses "mild aperients and mucilaginous beverage," and applies fomentations. "The head

* I may observe, in regard to the use of poultices composed of linseed meal, that they are in my opinion scarcely ever suitable, in diseases of the scalp.

should be washed with strained barley water, made with marshmallow, or poppy, or rosemary decoction, with liquor potassæ 3 ss. or 3 j ad ~~lb~~ ss.; dilute hydrocyanic acid 5 ss. ad ~~lb~~ ss. may be added if the pruritus be distressing; and this combined with a mild anodyne, if sleeplessness or intense itching occur." In case of high vascular action this practitioner employs more thorough internal remedies, and permits a moderate quantity of blood to be drawn once. "If the seales be thick and persistent, the arseniated iodide of mercury will be useful, combined with the vapour of sulphur and iodine, or the white precipitate ointment." In cachectic children, etc., he prescribes the syrup of the iodide of iron.

Dr. Neligan, as usual, cuts the hair close; uses, in the early stages, "weak alkaline ointments and lotions, with the addition of glycerine to either;" but when the eruption is of long standing, he substitutes for the former the tannic acid or dilute citrine ointment. Cod-liver oil for scrofulous children; for others, the alterative powders of the iodide of mercury and hydrargyrum cum creta. In very obstinate cases he employs more stimulating applications, carefully watching their effect. Attends strictly to the diet.

Mr. Plumbe considers this disease (though treated of by him under the head of pityriasis—as is the case with Dr. Neligan) as a result of constitutional debility, and treats it accordingly. He declares he has "never seen a single case where want of energy was not apparent, and very few where the supply of this was not followed by speedy recovery." He observes that "bark, steel, sea-bathing, gentle exercise in the open air, ease of mind, nourishing food, and plenty of rest, constitute what is usually requisite. . . . When the scalp is much affected, and the scurf forms in considerable quantities, the free use of a solution of acetate of zinc, in equal parts of rosewater and proof spirits, constitutes an agree-

able and useful application. The scalp may be freely bathed with it twice a day with considerable relief."

My own method of treating this affection, though simple, I have found to be infallible. I combine the tinctures of Wild Indigo root, Wormwood, Black Alder root, and Witch Hazel, employing four ounces of each. This compound I apply freely to the head three or four times a day. The parts may be kept clean by washing with a diluted tincture of Murillo bark.

The pruritus or irritation which often attends this and other eruptive diseases may be relieved, when excessive, by the free use of the following preparation:— One drachm of Sulphate of Zinc to twelve ounces of tincture of Wormwood. To this may be added one ounce of Wine Vinegar, in case its action proves tardy or ineffectual.

Scalled Head.

Though it would be difficult to name the disease which, more than any other, corresponds with the condition popularly termed "Scalled Head," and though I have described no affection under that title, I deem it advisable to meet the wishes of those who look upon a certain stage of one or more of the affections treated of in this work as a disease *per se*, and to prescribe for it as a *quasi* disease, requiring remedies adapted to its more prominent symptoms. That there may be no misapprehension, I will in a few words sketch the conditions of the situation attempted to be relieved. Either porrigo or ringworm (as described in the next chapter) is liable, if neglected, to terminate in it, and it corresponds very nearly, or perfectly, with *teigne furfuracée*, as described by Alibert, or porrigo *furfurans*, as it is more generally termed. According to Mr. Plumbe, the term "scalled head" is applied, under these circumstances, and generally "where the accumulated secre-



RINGWORM.

Porrigo scutulata. *Tinea annularis.* *Annulus papillosus.* *Bald scall.*

tions [from the same causes] are considerable in quantity ;" and though it is sometimes applied also to corresponding stages of eczematous affections, it belongs more particularly to the porriginous ones I have mentioned. My method of procedure is as follows :—

I thoroughly saturate the head, from time to time, with a compound formed of the tinctures of Running Pine, and Upland Lanrel, combined in equal proportions. Irritation, or itching, if excessive, may be subdued as directed in the last paragraph of the previous section.

The above compound will be found very useful in the cases for which it is designed. It is also an excellent application for malignant sores.

CHAPTER XIX.

RINGWORM.

Herpes circinnatus; *H. tonsurans*; *H. squamosus*; *H. capititis*; *Porrigo scutulata*; *Tetter*; *Porrigo*.

THE synonyms of Ringworm are numerous. The above list is by no means exhaustive; but it is sufficiently liberal to show that definite notions of the disease are not too common. Dermatologists are as eccentric in their views of the disorder itself as in the selection of a title for it. As it is extremely desirable that some definite idea be attached to the name, it will be a leading purpose of the present chapter to further this end, which I am aware can be attained only at the expense of much time and patience.

It is proper to explain, at the outset, that the appellation of *ring-worm* referred originally to two distinct

circumstances, one of which was the form (approaching the circular) of the patches of eruption or of scurf which characterize the disease, while the other seems either to have been merely a notion that the ring of diseased skin resembled a malignant *worm*,* or else took rise in the statements of Turner, one of the very earliest and quaintest English writers upon cutaneous diseases, —who declares that the hairs, in this disorder, are “eaten asunder by a small worm, like that bred in old wax, decayed fruits, or perhaps the common mite, scarce discoverable by the aid of glasses.” It would require very powerful glasses indeed to discover what (according to modern authors) has really no existence. Sennertus, a contemporary of Turner, seconds the latter very positively, observing that he “has been consulted by way of prescription to destroy them;” but it would seem that these worthies were deceived, or had met with a case or two of a peculiar and most extraordinary nature, or, finally, that what might have been in those days of common occurrence is now an obsolete phenomenon.†

I will introduce my views of ringworm with a few observations upon the group termed *Herpes*, or *Tetter*, —an eczematous affection which may be said to consist essentially in effusion of serum from the surface of the cutis.‡ The effusion raises the cuticle lying immediately over the mouth of the small vessels which conduct it to the surface of the cutis, exhibiting on the outer surface minute transparent globular vesicles, somewhat larger than those of eczema proper; they are generally

* Perhaps the name has the same origin as *tinea* (mothworm) referred to in a note to the preceding chapter.

† It is possible that the creatures referred to by Sennertus were “Hair-eaters,” and the cases those of no particular disease. (See chapter entitled “The Steatozoön Folliculorum.”)

‡ See “Eczema.”

clustered together and often regularly grouped. They appear on a red, inflamed areola of small dimensions, and proceed regularly towards exsiccation, forming branny scales which ultimately drop off. The eruption is preceded by a sensation of heat and tingling in the part, which is slightly swollen and reddened, and mild febrile symptoms are sometimes observed for a few days previous, especially when the eruption is to cover a comparatively large surface. In a day or two after the first appearance of the transparent vesicles, they acquire a pearly tint which deepens till they are grown opaque; they at the same time flatten, become semi-confluent, and at the end of two or three days, or sometimes a longer period, burst and emit a scanty serous discharge, which concretes into a yellowish-brown crust, soft and thin; this crust falls off, and the superficial ulceration thus revealed rapidly heals. In delicate constitutions, it may be preceded, for a day or two, by a quickened pulse and excessive thirst; or, more rarely, by pains in the epigastrium, and other symptoms of disorder of the digestive organs. More active symptoms announce, and also accompany, the severer forms of the disease. In these a copious discharge of the lymph of the vesicles takes place, and ulcerations of a tedious character may ensue. The best authorities—in fact, nearly all of every degree—pronounce herpes to be non-contagious in any of its forms.

The disease is divided by late writers into three principal varieties, viz.:—*H. phlyctenodes*, *H. zoster*, and *H. circinnatus*. The first named is also termed *Nirles*, and occurs both to infants and to adults; the second is commonly known by the appellation of "Shingles," and is likewise termed *Ignis sacer*. I do not propose to speak further of them, since they do not affect the scalp or the head. Indeed, the same has been asserted of the third variety, *H. circinnatus*, or *Ringworm*, and

by many of the best authorities,—who consider the ringworm of the *scalp* a species of porrigo, in no way connected with herpetic disease. This view is also ably supported by Mr. Plumbe,—one of the writers whom I have repeatedly mentioned in late chapters,—while it is opposed by Dr. Neligan, another whose work has afforded me some useful material. The latter would seem willing to convey the impression of having originated the theory which brings the ringworm of the scalp under the head of Herpes; but Bateman alludes to the same idea, which evidently was not new even then. “The herpetic ringworm,” says he, “is most commonly seen on children, and has been deemed contagious. It has sometimes, indeed, been observed in several children, in one school or family, at the same time; but *this was most probably to be attributed to the season, or some other common cause;* since none of the other species of herpes are communicable by contact. It is scarcely necessary to point out here *the difference between this vesicular ringworm and the contagious pustular eruption of the scalp and forehead which bears a similar popular appellation.*”

The very judicious observation of Dr. Bateman (the first of the two) which I have emphasized in the foregoing extract contains an idea which it has often seemed to me may serve to account for the *appearance* of contagion in many diseases, and to allay the apprehensions of such as easily take alarm on their approach. Among the small children of a family, alike in constitution, and living in precisely the same way, on the same food, the wonder (if there be any wonder) rather is that any prevailing constitutional disease should not uniformly seize all alike and at very nearly the same time. Of course, superior vigor would impart to one child in a family the power to resist the attacks of disease somewhat longer than another; and thus it is that when perhaps the

most susceptible of the children has first contracted a disease, and the others have very soon afterward followed the example, the former will generally be supposed to have imparted it to the latter, however absurd the fancy may seem, in the light of philosophy and common sense.

Thus, though it were proved that the genuine herpetic ringworm does now and then appear on the scalp (a proposition which I do not think wholly unreasonable), and that whether in that situation or some other it has occurred to a number of persons at very nearly the same time, especially children of the same family—there would still be lacking a variety of evidence necessary to prove the fact that it is contagious. It is plain that even the fact of its having quickly followed *contact*, might be nothing more than a probable coincidence; and so far as the most reliable and really *decisive* proof having been given (that of its production by inoculation), I have not learned that such has ever been offered.* Even had it been, there would recur the question whether the case reputed to have been so reproduced were an undoubted one of *herpetic* ringworm.

As all the other varieties of herpes are innocuous, why attempt to make the *H. circinnatus* an exception, when the ringworm of *porrigo*—a disease generally thought to be contagious in all its forms, and which does really visit the scalp—possesses a rational classification and can easily be made to cover every known case, occurring on the scalp or elsewhere, that may have exhibited proofs of communicability?

Herpes circinnatus,† as its name implies, exhibits the

* "Herpes *circinnatus* cannot be, and never is, propagated by inoculation."—*Rayer*.

† Or *circinatus*:—*ερπης*,—*απο του ερπειν*, *a serpendo dicto*,—from the creeping nature of the disease; *circinatus*, *κιρκλος*,—an instrument employed in describing circles.

herpetic vesicles arranged in the form of circles, of greater or less size. Small red circular spots, of from half an inch to an inch in diameter, are first seen, apart from each other, their number generally bearing some relation to their size. The vesicles soon appear on the outer edge of the circle, and go through the usual changes, the redness gradually departing from the central portions, but remaining at the circumference, and constituting a narrow circular band which projects on either side a little beyond the ring of vesicles. Sometimes fresh crops of vesicles continue to arise on the outer edge of the ring, which thus slowly enlarges, though it rarely attains a size greater than that of the palm of the hand.

It will be observed that the ring above described encloses healthy skin, and that the disease does not assume a chronic form ; and it will be remembered that these various forms of herpes are generally admitted to be innocuous. I quote, immediately following, a few words from the treatise of Dr. Neligan, describing what is therein termed another form of the *H. circinnatus* : premising that I do not assent to the wisdom of the classification :—

“ Occasionally it occurs that the vesicles, instead of bursting and forming crusts, dry up, and are succeeded by a secretion of *fine soft scales*, which continue to be exfoliated, not alone from the circumference, *but from the centre of the circles*. This form has been specially described by Cazenave, who denominates it *Herpes squamosus* ; it is always chronic, and very obstinate to treatment.”

The passages italicized indicate a distinction so vast that even Dr. Neligan himself is affected by it, for he observes, a little further on, that “ this form of herpes, when it occurs on the scalp, requires to be specially described, as *it constitutes almost a distinct variety*,

which might be termed herpes *capitis*; it resembles in many of its characteristics the herpes squamosus of Cazenave; but that distinguished dermatologist, *in consequence of the effect its presence exerts on the hair*, proposes to term it herpes *tonsurans*." He then remarks that "many of the celebrated English writers on diseases of the skin" deny that the disease is a form of herpes, considering it rather a species of porrigo; but for his own part, independently of M. Cazenave's corroborative views, he must adhere to the theory he "propounded some years since," which has been sustained by "prolonged clinical observation." Whether the views "proponnded some years since" had any thing to do in the way of insensibly biassing his subsequent judgment upon the doubtful point, I will not decide; but it seems philosophical, in this instance, to agree with the older writers, who, in my opinion, have on their side the advantage of a nosological arrangement at once natural, plausible, and desirable.

The porrigo *scutulata*, or ringworm of the hairy scalp,* is rarely brought to notice in its incipiency, owing to the fact that it is ushered in by little or no constitutional disturbance, or any very important sensation in the part affected. As it occurs principally, if not exclusively, to children, at the active age,† who would hardly consider a slight tingling—provided they felt it—a subject important enough to bring before their parents, it is only when the hair changes its appearance, and begins to fall, that any thing unusual is observed. The first indications of the disease, apparent to the eye, are several very small rings of minute or almost micro-

* Porrigo *scutulata*: from σκυτάλη, a small dish, of a rhomboid form, used by the ancient Greeks. Porrigo, a porrigo,—from its spreading nature.

† From three or four to twelve.

scopic vesicles, the advent of which is unattended by redness of the adjacent parts. A trifling discharge may attend the destruction of this first crop of vesicles, which dry up and desquamate, and are followed by others, which occupy a larger space exterior to the first and run a similar course. Thus the affected spots slowly increase in size, still preserving their circular form (they are rarely *perfectly* circular, and often assume more or less of an oval shape), the central parts, which were first affected, sometimes appearing slightly elevated above the general level of the scalp, and always exhibiting numerous fine scales, easily removed and promptly renewed.

These later stages of the disease are sometimes attended by violent pruritus; and the effort to relieve it of course directly aggravates the symptoms by increasing the local irritation and inflammation. The hairs begin to be affected, early in the history of the disorder, those situated within the rings exhibiting various indications of low vitality, such as dryness and harshness, and a propensity to double upon themselves; then they become twisted or broken, discharge a part of their color, and become loosened in their sheaths, so that they fall off their own accord or are easily extracted. In some cases, a few of the hairs which remain on the affected portions of the scalp collect into little agglutinated bundles, and present the appearance of tow. It is not uncommon to observe on the denuded surface a downy or fuzzy growth, resulting from the efforts of nature to replace the hair that has been lost.

When the scalp is carefully examined—particularly if it be first shaved—besides the two or three or even a greater number of spots exhibiting the advanced stages of the disease, there will usually be discovered a number of small discolorations, of a yellowish red, which will eventually disclose the same features that

have characterized the others, and pursue a similar course.

The foregoing may be said to embrace the chief features of the *ideal* ringworm, as displayed by subjects of the "blonde" variety, with no constitutional disorder and but trifling irritability of skin,—whose hair is fine and thin, and who have employed no stimulating applications upon the scalp, and, in short, have permitted the disease to take its way unmolested. Of course, even with such subjects, such conditions would be rare enough; and we must accordingly look for many modifications of the symptoms described above, based on constitutional unsoundness, scrofulous taint, a bilious temperament, irritability of the skin, uncleanly habits, gross living, a bad state of the blood, thick, strong hair, the application of various stimulating and otherwise unsuitable compounds, and a variety of other circumstances which it is unnecessary to mention.

Thus, if we suppose that the disease has appeared on the head of a person of full habit, a gross feeder, with thick, strong hair, and a very dirty scalp, we should naturally look for, first, some slight febrile symptoms; next, more or less inflammation in the growing spots, and irritation beginning very early; scratching would aggravate the inflammation, and minute achores or ulcerations would appear about the edges of the spot and perhaps in the central portions—particularly should any stimulating application have been employed; there would be much irritation, increased by the stiff strong hair, acting as a local irritant; the patient would be driven to scratch the spot; the ulcerous pustules would be broken, and their contents would harden into a scab, which, frequently broken and removed, would grow larger and thicker, and underneath it there would be much rawness, if not a state of positive ulceration. These symptoms would exist until the force of the dis-

ease had begun to abate, or had been altogether suspended.

Taking for our example a case in which great irritability of skin exists, it would not be reasonable, even at the outset, to look for the mild symptoms first described. Though the original spots might be small, perhaps the vesicles would be altogether wanting, being merged, through the urgency of the disease, into a single achore or pustule of trifling dimensions, which, quickly drying, would soon exhibit a small yellow scab, of which we should expect the outer portions to be higher than the central, in conformity to the ideal formation of the eruption, which is most active on the circumference of the small circle in which it originates. Then, just as the ring increases in size by the appearance of successive crops of vesicles upon its outer rim, we should find the little yellow circular scab enlarging its dimensions, from the additions made by the drying of the contents of the pustules successively forming under its edges, until the latter from their increased size would succeed in elevating the outer portions of the scab all around, and thus we should perceive the distinguishing feature of *porrigo*, as described in a previous chapter: the circular-cupped scab.

For some of the ideas embraced in the two paragraphs immediately preceding, I am indebted to Mr. Plumbe, who in this connection observes "the contents of the pustules under the smaller scabs possess the power of inoculating with ringworm any part of the skin of other individuals." This he asserts has been "proved in several instances by experiment." He further remarks:—"I have also seen repeatedly, in the same family, different children showing the different conditions of the ringed incrustation, and the circular-cupped scab, as well on other parts of the body as on the scalp." This writer considers ringworm to be one of two principal

species of porrigo,—the other being termed by him the diffused or pustular form, found chiefly “among children of dark hair and unhealthy constitutions.” He describes the latter species as being “pustular from the beginning, and marked during every stage of its progress by a much greater degree of irritation and itching. It is so generally diffused over a considerable space, even on its first appearance, as to warrant a designation founded on this feature,” in contradistinction from the other, “which is so constantly circumscribed.” Further on, he says:—“from the greater quantity of fluid secretion occurring in this form, the power of infection, and rapidity of extension, is considerably greater than in the circumscribed species. The manifest increased susceptibility to irritation of the skin of the individual also favors this difference: not unfrequently, however, under an improved state of the general health, and frequent ablutions of the part, assisted by sedative applications, the disease subsides into *a condition much resembling that first described*; the hair exhibiting the same character, and a very small number of pustules appearing at intervals amongst it.” He elsewhere states that he has “ascertained, beyond doubt, in a variety of instances,” that the two forms have “*the power of producing each other;*” a fact which, he observes, “is perhaps by itself sufficient to establish their identity.”*

“By means of the microscope,” says Wilson, “we ascertained that the hairs in ringworm are considerably swollen, and that their structure is entirely altered from its original type; that, for example, the outer portion

* In his remarks on diffused porrigo, this author remarks that “in cases where infection from the other species could be traced, it has either derived its aggravated character from a general unhealthy disposition of the constitution, combined with scrofulous affection of the absorbent glands, or [from] a preternatural disposition to irritability of the skin.”

of the fibrous part is converted into small granular cells, having a diameter of about 1-5000th of an inch; that many such cells are introduced between and among the fibrous part, so that the latter is, as it were, disintegrated by the intrusion of these granules, and consequently weakened in its tenacity. This is the cause of the enlargement of the hair, of its lighter color, twisted appearance, and fragility."

In an "Essay on Ringworm," by Andrew Paul, surgeon,* occur the following passages:—"I have generally observed a harsh, dry state or unctuous feel of the skin in children [affected with ringworm ?], especially among the lower classes.† It is most partial in its attacks on the weak and sickly child, particularly where delicacy of fibre is inherited from one or both parents. Indeed I think general observation will coincide with my own, that there exists a *peculiar* state of constitution which is favorable to worms, vermin, ringworm, and scrofula. It is common in large populous cities, where children have not ready access to exercise in the open air, or sicken and pine in nurseries. I have seen, on the contrary, bloated and stuffy children suffer from the disease in its worst form, and [as] the result of diet, too poor or too rich, whether breast or spoon feeding. In more advanced life, among boys and girls, in crowded schools or extensive factories, in rag mills especially, a branch of paper-making, where they are to be seen in a cloud of dust eight hours out of twelve, inhaling an atmosphere loaded with all that is dirty and offensive in cast-off clothes. . . . The diet and regimen of most charitable institutions . . . must mainly contribute to invite the complaint, and, once introduced,

* London, 1838.

† "Braudeloque, a French author, considered that the sebaceous follicles . . . were the seat of the disease."

almost to perpetuate its residence within their walls." This author elsewhere enumerates the "constitutional symptoms which precede and attend on ringworm," as follows:—"a sluggishness and weariness on slight exertion; depraved, fickle appetite, sometimes puny, sometimes ravenous; wasting of the flesh; dropsical fulness, and paleness of the visage; an irregular and costive state of the bowels, one week purged, the next, bound; a change in the color and odor of the faeces; fetid breath, with acid or sour smell from the person: all which are usually associated with worms; many of them are the symptoms of the latter."—I may observe, of the foregoing extracts, that Mr. Paul includes, under the head of Ringworm, all the various porriginous disorders, and, indeed, so far as I can judge from a rather hasty perusal of his treatise, nearly all the eruptive diseases which visit the scalp. Those cutaneous affections which partake of the nature of porrigo are altogether more frequent in England than in this country. One reason of this is doubtless that far less wretchedness is here observable among the poorer classes, among whom more rational views of life are commonly held than are entertained by a corresponding class in Europe.

TREATMENT.

Ringworm unfortunately belongs to a class of diseases which are very frequently entrusted to old women and empirics, who generally apply some violent astringent or some unctuous preparation which is quite as likely to aggravate the disease and render it more obstinately chronic as to be of even temporary benefit. Schoolboys and others have often applied *ink* to the affected spots: sometimes, it is probable, with apparent success, since the well-known astringents of which it is composed would naturally tend to close the mouths of the

vessels from which the morbid matter oozes; but the question is, whether the use of astringent applications, in any given case, is judicious,—for it may, on the contrary, be very dangerous; and even where the case is otherwise, whether so filthy and offensive a substance affords the requisite astringent property in a desirable or effectual form. Serious ulcerations have been produced by the use of ink in this way. Tobacco-water, a rank and powerful poison, still more dangerous and odious, has also been employed in the popular treatment of this disease. It is sufficient to observe that all the popular remedies for ringworm are more or less dangerous when used promiscuously, and to advise every one to shun them and promptly secure the best medical advice. Much annoyance, perhaps much suffering, may thus chance to be avoided; for ringworm carries with it a not very desirable prestige, and besides is occasionally a very obstinate disease, especially when it has been tampered with at the outset.

Though ringworm is a porriginous disorder, and may generally, therefore, be successfully treated on the principles which govern the parent disease, there may be cases in which a stimulating application is especially indicated; in these, and in such cases generally as may prove rebellious to my treatment for porrigo, I would recommend the moistening of the affected parts every morning with a weak solution of the tincture of iodine,—first cleansing the scalp with a solution of Murillo bark. The method of cleansing directed by Dr. Nelligan I think decidedly inferior to this. If preferred, the iodide of lead ointment for porrigo of this author may be used, after cleansing the parts. I have used, for cleansing, a solution of the salts of tartar: two ounces, to one quart soft water and one gill of alcohol; but the Murillo bark wash, while quite as thorough, is softer and pleasanter, and is therefore to be preferred. The

strength of the iodine lotion may be gradually increased as the disease seems to yield to the treatment.

Mr. Plumbe's method is as follows:—"Where the characteristics of the well-known ringworm of the scalp exist, whether accompanied or not by spots on other parts of the skin, the best and most effectual application is that of one of the undiluted mineral acids. Of the three, perhaps the preference may be given to the sulphuric: and I have been accustomed, whenever a case has been brought to me in an incipient state, to direct the removal of the whole of the hair of the scalp by shearing, or in other words, cutting the hair as close as can be done with a pair of scissors, and then to apply this fluid lightly on every spot which could be discovered, by means of a feather. It should be suffered to remain on a few minutes, and should be carefully spread over the whole of the diseased spot, and a few lines perhaps beyond its utmost boundaries. It usually produces a good deal of smarting, and a slight blush of redness on the surrounding cutis [cuticle] in a very short space of time; and when this is observed, a sponge dipped in warm water should be made use of to clear away what remains of the acid, otherwise it is apt to affect the scalp too deeply. When applied in the above manner the cuticle is evidently destroyed by it, and the vessels of the diseased cutis are much excited. In a few hours a tolerably copious exudation of coagulable lymph is produced on the spot, which [lymph] forms a scab more or less thick. No appearances are now observed of the circular spreading irritation of the original disease, and in a few days the scab dries and separates, and brings with it the remaining unhealthy hairs of the spot. A bald spot somewhat reddened is now observed, the color of which soon disappears, and new healthy hairs begin to spring up, and speedily cover the part. . . . This application," he adds, "may be resorted to with a certainty

of eradicating the disease, in almost all cases where the health is good, and where the disorder preserves the chronic circular form. Even if there be a few pustules distinguishable within the areola, it may still be safely relied on."

CHAPTER XX.

LEPRA AND PSORIASIS.

THE common notion of Leprosy endows it with characteristics of unique and fearful repulsiveness. In the minds of most, it is something ill-defined and dreadful, like the recollection of a nightmare. Unfortunate, indeed, was a leper, in the days of Naaman the Syrian! In the eyes of his neighbors he was an object by many degrees more loathsome than pitiable. The disease was associated with a moral deformity as marked as the physical; it was supposed to be contagious, and removable only at the will of Heaven. Hence its unhappy victim was one whom it was almost as general to hate and dread as to avoid. Whether the disease termed lepra can claim a very intimate relationship with the leprosy of ancient times, is a question which it is now impossible to answer; but it is very probable that it is precisely the same nature, though differing materially in degree. Be this as it may, it is to be presumed that few or no lepers are now to be found "as white as snow." In the lepra *alboïdes* of Willan, in which the affected surface is covered with small white scales, we perhaps have the nearest modern approach to the leprosy of Biblical times; indeed, in order to realize it pretty nearly, we have only to fancy this form of leprosy as assuming a general character. Leprosy is not a loathsome disease, if we may judge from its actual appearance. The affected parts present none of the features which disgust

ns in ordinary cutaneous disorders. "In fact," says Wilson, "there is nothing repulsive; but, on the contrary, if it were the general, instead of being the exceptional, it would be thought very beautiful, and would become highly fashionable." I cannot myself go quite to this extravagant length, in praise of leprosy; but the passage may stand as an offset to the ordinary notions of the disease,—impressions which on the other side are much further removed from the line of justice.

The two related disorders, which I have named at the head of this chapter are by some dermatologists considered so distinct as to merit a separate diagnosis: by others they are regarded as one, or but varieties of one; and there are no writers, so far as I am conscious, who do not look upon them as connected by very intimate ties. They differ in nothing but in the form and distribution of the patches of scales which characterize them both, and they require substantially the same treatment.

Epidermic desquamation, in the form of *scales*, is the distinguishing and correlative feature of these diseases. They were accordingly embraced by Willan, together with pityriasis (which see), in the order *Squamæ*, and to them was added a fourth, ichthyosis, which has since, for I think, inadequate reasons, been displaced.* Cuticular desquamation, as will be remembered, is a feature of certain other cutaneous diseases; but it is claimed that the exfoliation takes the form of *scales* only in the diseases of this order. If there were no other distinguishing characteristic, this peculiarity would seem almost too trivial to constitute the groundwork of a new order; but there are others, not less marked. Thus, in some of the disorders mentioned in the previous chapters on porrigo and ringworm, the exfoliation of morbid cuticle which

* See "Ichthyosis,"—early part of the next chapter.

they in certain stages exhibit, is preceded, accompanied and followed by inflammation, or pustular effusion, by incrustations, prurigo, etc., as well as by various constitutional symptoms. None of these various manifestations is peculiar to the leprous affections, which are essentially slow, and morbidly chronic. I am not prepared to deny that there may be some such relation established between leprosy and the teigne furfuracée of M. Alibert, for instance, as is generally admitted to exist between the active and the chronic forms of any specified disease. The "whitish furfuraceous scales" of the latter, if we fancy them evolved with the greater deliberation which would attach to a quieter and more inveterately chronic form of the disorder, might not exhibit a form and character wholly unlike that of the leprous scale,—which is defined by Willan as "a lamina of morbid cuticle, hard, thickened, whitish, and opaque." The term "scales," in the description of the *T. furfuracée*, would seem to have been employed in a sense varying slightly from that which is now generally attached to it; but the difficulty of supplying its place with an appellation which could at all answer the desired purpose, is perhaps a sufficient excuse for the practice. The terms "scale," and "true scale," suggest a distinction sufficiently marked to satisfy all but the most inveterate of nosologists. "Squamous eruptions," says Dr. Neligan, "may be defined to consist in the secretion of dry, laminated whitish scales on the cutaneous surface, usually occurring in patches, often of a circular form, but sometimes generally diffused, and covering an extended portion of the integuments. . . . The scales," he further observes, "which are somewhat elevated above the level of the surrounding skin, readily fall off, to be again rapidly renewed; and the portions of the cutaneous surface on which they are formed are of a smooth, glistening aspect, reddish and dry." Parts of this *résumé*

may not possess a universal application; but on the whole it affords a very satisfactory general view of the leprous diathesis, and therefore merits exceptional notice.

If lepra and psoriasis are to be considered as one disease (and there would seem to be no very learned reason to the contrary), I should prefer the retention of the former rather than the latter term. The former is the more ancient; and the only valid objection to its use, viz: the associations connected with it, is not now very formidable. *Psora* was the term applied by the Greek physicians to the disease now known as "scabies," which is not all like the one to which it has been transferred. It, however, has an imposing sound, and this, with many, will transcend every consideration which could be urged in favor of the more legitimate appellation. Preferring, for my own part, the rational to the fanciful (where they strongly militate), I shall here preserve the former term, making it include both varieties, and leaving pityriasis for a different and still more radical association.*

The first symptoms of lepra are the appearance of a number of red circular spots, usually quite distinct, and elevated perceptibly above the general level. At the beginning, the spots rarely exceed the size of a split pea, and are as high at the edges as in the centre. A certain degree of rigidity is apparent to the touch, the natural flexibility of the part having measurably departed. After the lapse of one or two days it will be observed that the spots have acquired a very smooth, hard, glossy surface, imparted by a thin, semi-transparent, silvery-white scale, which has formed during the interim. As the affection is constantly spreading, and this growth produces a gradual change in the disposition of the particles beneath the unyielding scale, the latter

* See chapter entitled "Pityriasis."

becomes loosened, especially about its circumference ; and if it be removed, a minute protuberance, more like flesh than the substance of the scale, will generally be discernable at the centre, and a corresponding small depression will be perceived in the surface whence it has been detached ; sometimes a speck of blood may be found in the latter, the former being slightly discolored. No effusion, however, can ever be detected ; and when the scale is permitted to fall of itself, even the appearance of blood may be looked for in vain. It may be observed that the surface which has shed or lost the scale exhibits no particular change of color, but is now rough and uneven. As the spots enlarge, fresh scales succeed the first one, but are thicker, and on the under surface smoother and drier ; they soon cease, however, to present a continuous, unbroken surface, as from their exceeding dryness and brittleness they crack into fragments more or less numerous,—the edges (becoming more perfectly exsiccated than the general substance) looking white and powdery. The greater the size which the circles attain, the higher is their outer portion raised above the central ; the latter exhibiting, as in ringworm, a comparatively healthy appearance* much earlier than the remainder of the eruption. Sometimes, when the spots have been pretty thickly sown, their gradual enlargement causes some of them to partially coalesce, though such portions of their several perimeters as do not become merged in some neighbouring circle still retain their original curve. Though the desquamation of the central portions of the spots somewhat changes its character, that from the borders still retains the original form of true scales, which are sometimes so crowded, at the extreme limits of the patch, as

* From the central portions of the patches, at this period and afterward, fine epidermic scales, in small quantities, continue to be desquamated.

to become imbricated on one another. The seat of the eruption grows somewhat hypertrophied, or thickened and hardened, in the course of the disease.

The foregoing description relates particularly to the form known by the names of "dry tetter," and lepra *vulgaris*; it has also been variously termed "lepra" and "psoriasis *lepræformis*." It is the "*Dartre furfuracée arrondie*" of M. Alibert. Mr. Plumbe, who employs the term "lepra" in this connection, makes the following interesting statement :—"There is one circumstance peculiar to this disease, which has been particularly mentioned to me by the patient, namely, a sensation of pricking, most frequently noticed a little before the separation of the first scale, when perhaps it has scarcely attained the size of a spangle. I am inclined," he says, "to think this sensation the consequence of the raising up of the edges of the scale, produced by the tumefaction and elevation of the inflamed margin, and fresh growth of scale; the centre which was attached to the cutis being thus forcibly torn from such attachment. This conjecture is rendered more probable by the fact that when the disease is obviously subsiding, when no new scales rise up and thrust those which were before formed from their attachment, the pricking in question is no longer felt."

Many dermatological writers are so unphilosophical as to regard any accompanying constitutional disorder as a *consequence* of the cutaneous disease; when the direct reverse is almost always the case. Had there been no constitutional disorder, there would probably have been, in the majority of instances, no cutaneous disease. The constitutional derangements which are most influential in inducing cutaneous diseases, are debility of the cutaneous organs, produced by impaired digestion, a full habit caused by excessive feeding, scrofulous taint, and hereditary predisposition. The most rational cause that

can be assigned for lepra, is a chronic inflammation of the vessels of the cutis which produce the cuticle, originating in a languid and inactive condition, which has been induced by a diminution of the portion of vital force to which the parts are entitled,—in many cases the result of impaired digestion of long standing. I have here gone far enough in the direction of “first principles,” though it is not impossible to proceed, and inquire into the causes of the impaired action of those organs whose office it is to nourish the system and maintain its vital force. A sufficient illustration of the foregoing lies in the fact that the majority of cases of lepra are found among those who are engaged in exhausting manual labor, or who devote too much time to intellectual pursuits of a sedentary nature, especially where anxiety of mind is superadded, or any depressing emotion frequently recurring.

The propensity of nosologists so frequently alluded to in these pages,—viz.: that of instituting distinctions based on trifling variations in the symptoms of cutaneous diseases,—is exhibited also in lepra, which has been divided into three or more species, Willan mentioning *L. vulgaris*, *L. alphoides*, and *L. nigricans*. The first two of these would seem to be only different stages of the same disease, while the latter is declared by Mr. Plumbe to be “the result of a scorbutic state of the system operating in combination with the ordinary causes of the cutaneous disease.” M. Alibert creates distinctions of a similar character.

As for psoriasis, as described by Willan and others of the older writers, it would seem to be merely a more active form of lepra, in which the eruptive action has not sufficient leisure to indulge in mathematical niceties of form, but gives rise to patches of an irregular shape, of which the edges are but slightly raised. “Psoriasis,” says Rayer, “is a chronic inflammation of the skin,

limited to a single region of the body or occupying almost its entire surface, appearing primarily under the form of solid elevations, which change into squamous patches of different sizes, *not depressed in the centre*, and of which the edges are irregular and but slightly raised." Dr. Neligan, who describes lepra and psoriasis as one disease, under the head of Psoriasis, observes that "the eruption appears in small, round, or irregularly-shaped spots, distinct from each other, scattered over the cutaneous surface in large, circular patches *depressed in the centre*, or in masses so closely aggregated and confluent* as to envelop an extended portion of the skin in one vast coating of scales in consistent layers." The passage underscored in the latter extract refers particularly to the *P. lepræformis*, or lepra; the correlative passage in the previous extract refers to psoriasis proper. Dr. N. proceeds as follows:—"The surface of the integument on which they [*i. e.*, the spots, patches, or masses] are situated is raised, reddish, and apparently inflamed, but unattended with any discharge; nevertheless, when the eruption has been of long duration, fissures and cracks through the deeper-seated tissues form, from which an ichorous, bloody secretion exudes." The rhagades or fissures above mentioned, and especially the discharge, refer particularly to the variety termed by Willan "*P. diffusa*," which consists of large patches, irregularly circumscribed, and to *P. inveterata*, which, from separate irregular patches, may become so general as to include very nearly the whole surface of the body. "Psoriasis," says Rayer, "can only be confounded with three diseases, which, like it, affect the squamous form, namely lepra, pityriasis, and scaly syphilis. There

* This word is not to be understood, in this connection, as implying fluidity in the several masses; it signifies a coalescing, and merging of outlines.

exists, indeed, between lepra and psoriasis a very great similarity. The resemblance of psoriasis *discreta* to lepra is more particularly striking. Both of these affections of the skin commence as solid papular looking elevations, both soon assume the shape of circular scaly patches, and these in the same patient frequently present the appearances characteristic of psoriasis *discreta* on the trunk, and those distinctive of lepra on the knees and elbows." The latter part of the above is significant, and needs no comment. *P. discreta* is the variety termed *P. guttata* by Willan, from *gutta*, a drop. In this disease, according to Rayer, "numbers of small, distinct elevations and squamous patches occur, from two to four lines* in diameter, irregularly circumcribed, and of a form and appearance very analogous to that which results when the body is sprinkled with water, and the fluid lies in large drops upon its surface." The scales of this variety are very thin, and more or less imperfect; the spots, however, generally enlarge, and the scales become rather thicker and firmer, still preserving their delicate silvery appearance. The disease is at this stage obviously identical with lepra. The *P. diffusa*, briefly described a while since, is the *P. confluens* of Rayer. Dr. Neligan denominates it psoriasis *aggregata*,—the term referring to the aggregation of numerous minute "rounded elevations of the epidermis" into "irregularly circumcribed patches," which vary greatly in size as well as shape. The scales—which, at first small, form upon these small elevations from their first appearance, and rapidly increase in size—are shed and re-secreted with marvellous celerity, surpassing in this respect the scales of *P. guttata*. To continue the description of this obstinate disease, it may be briefly observed, that new patches form from time to time,

* A line is about the eleventh of an inch.

sometimes through an interval of many months. Though the original patches may in three or four weeks cease to increase in size, there is no intermission in their production of scales. The several patches, old and new, frequently coalesce and form prodigious tracts of diseased surface, which is raised above the level of the healthy integument, the discrepancy being greater in the parts contiguous to the latter, and least in the central portions. Under the fast-forming scales the elevated cuticle has a dull reddish color, but for a long while may exhibit no decided symptoms of irritation, except in occasional cracks or fissures disclosing the deeper portions of the integument, whence, from time to time, a small quantity of blood exudes.

Both *P. guttata* and *P. diffusa*, in an aggravated chronic form,—particularly the latter,—have received the obvious appellation of *P. inveterata*. Nearly the whole surface of the body is at length affected, in this form, the face being excepted more commonly than any other part, excepting the palms and soles. In it, according to Willan, “the skin is red, deeply furrowed or wrinkled, stiff, and rigid, so as somewhat to impede the motion of the muscles and of the joints. So quick, likewise, is the production and separation of scales, that large quantities of them are found in the bed on which a person affected with the disease has slept. They fall off in the same proportion by day, and being confined within the linen, excite a troublesome and perpetual itching.” Deep furrows intersect the crusts, in various directions, imparting to the surface, in the language of a late writer, “a striking resemblance to a piece of tessellated pavement.” The absence of “deep furrows” in a tessellated pavement must detract something from the force of this poetic comparison, which, however, conveys a tolerably satisfactory general notion of the phenomenon in question. It is obvious that

psoriasis inveterata is anything but a pleasant companion to persons of a lively temperament. This is emphatically true when to the foregoing symptoms are superadded an intolerable pruritus, always aggravated by heat, and the exudation of an ichorous and bloody pus from the fissures or rhagades before mentioned;*— trifling expansions of the diagnosis that must now and then be made, to suit those more incorrigible or perhaps more neglected cases which have become—in the words of the same writer—"very chronic."

P. guttata has had the honor of a very large number of nosological variations, based on the accidental location of the disease; thus we have *P. labialis*, *P. palpebrarum*, *P. capitis*, *P. scrotalis*, *P. palmaris*, *P. unguium*, etc. The term *P. capitis* can have no exclusive or very important meaning, since *P. diffusa* and *P. inveterata* also appear on the scalp. None of the different varieties which are known to visit that region ever affects it exclusively; so that, although the disease, when it occurs to parts covered with hair, may exhibit certain peculiarities which tend to confuse the diagnosis,† it may readily be defined by its simultaneous appearance on other parts of the body, where there is no danger of ever mistaking its character.

One of the four varieties of psoriasis described by Willan yet remains to be mentioned: the *P. gyrata*, so named from the extraordinary appearance of the eruption, which is distributed in the form of longitudinal, tortuous, serpentine, or vermiform stripes, or bands, and occasional elaborate patches made up of similar details, or small rings shedding fine scales and presenting little discoloration,—the latter usually affecting children and

* "The entire of the affected regions," says Neligan, "is a mass of leprous irritation, attended with a foul discharge."

† Mr. Plumbe's account of lepra that has extended to the head does not differ materially from Alibert's description of *teigne granulée*.

delicate young females, and "mostly confounded," says Willan, "with the herpetic or pustular ringworm." One peculiarity of the disease partakes of the whimsical or fantastic; namely, that of frequently presenting itself in duplicate fashion,—the figures upon opposite corresponding parts of the trunk, and sometimes of the limbs, appearing like tolerably faithful copies of each other. The disease intermits and returns, and is apt, from this circumstance, to deceive those who are not familiar with its character. It rarely or never attacks the scalp, the variety which sometimes affects the latter regions in conjunction with it being psoriasis diffusa.

M. Rayer observes, in reference to the eccentric stripes or bands which characterize the *P. gyrata*, that "these bands, however disposed, are affected with a very slight furfuraceous desquamation. I have met," says he, "with but two cases of this variety, in neither of which could I observe any thing like papulæ, or round squamous patches, analogous to those of *psoriasis discreta*: this eruption is seldom attended with pruritus, even when the temperature of the surface is increased by exercise or any other cause."

"Psoriasis," says M. Rayer, "seldom appears primarily upon the hairy scalp. It there usually occurs in the *distinct* form; the squamæ are always yellower and more pulverent than when they are produced from the trunk. The *confluent* form of the disease is still rarer here. I have, however, seen it covering almost the whole surface of the hairy scalp, and extending to the forehead, in a line parallel with that of the implantation of the hair, under the form of a prominent band, an inch in breadth, whose surface was covered with rough squamæ of a dull white color, and whose lower edge was red and much raised above the level of the healthy skin. The inflammation of psoriasis frequently attacks

the bulbs of the hair, which is then detached from the points [parts of the scalp] affected." He elsewhere observes that "psoriasis *discreta* of the hairy scalp differs from pityriasis of the same part, by appearing under the form of patches which, beneath the squamæ, always present a red central point that passes the level of the skin generally."

Dr. Neligan observes that the scales of psoriasis, occurring on the scalp, are "thicker and more solid than when situated elsewhere on the cutaneous surface." He further remarks that they are very persistent, "often constituting a firm, imbricated, adherent, dry crust, the outer layer of which only desquamates." It would not be easy to reconcile the discrepancies of these two statements, both so positive and literal, unless we were to consider the experience of one or both of the writers to have been very limited in this branch of practice. The probabilities (fortified by the results of my own observation) are greatly in favor of the soundness of M. Rayer's views. Not content with the advantages of an extensive practice, he benefits largely from the labors of others, since it is apparent he is a careful and exhaustive student of their works. When we consider the nature of the cutaneous structure, particularly of the scalp, the large number of the sebiparous and sudoriparous glands emptying their contents upon the surface, and the exceeding aptness of the occurrence of pustular eruption in that region, it seems impossible that the statement of Dr. Neligan can possess more than a very limited application. Such a formidable solid crust would never be permitted to form on the head of a person moderately cleanly in his habits; and as for the gross and filthy, no such crust could long continue its irritative presence, in the vast majority of cases, without inducing aggravated symptoms of *porrigo favosa*.

It may be observed that there is danger of confound-

ing some kinds of *syphilitic* eruption with psoriasis, since they not unfrequently assume a scaly character; but in the former the affected parts, beneath the scales, are of a dull coppery or livid hue, and it may from this circumstance be distinguished from the more respectable disease, in ease the representations of the patient should be thought lacking in frankness. What has been termed *P. infantilis*, or the psoriasis of infants, is frequently and most cruelly misunderstood, the affection of the skin being considered the result of venereal taint on the part of the parents. Dr. Willan thought it necessary to caution his readers against these injurious mistakes; and Mr. Plumbe—whose long, conspicuous, and honorable connection with several infirmaries for children has given him the privilege of speaking with authority in the premises—also adduces reasons for extreme caution in discriminating these cases. “From a very minute and lengthened inquiry into the history of many cases of this disease,” he observes, “I am irresistibly led to the conclusion that it has no connection with any form of venereal disease, except indirectly; *i. e.*, when a syphilitic affection may have combined with other causes in reducing the strength of the mother, or otherwise depriving the child of healthy sustenance. A general healthy performance of the different animal functions, which is often found compatible with constitutional syphilitic disease, is not seen in the cases of infants affected with psoriasis. It is found to occur, moreover, where the parents on neither side can be liable to suspicion.”

That *P. infantilis* is in the vast majority of cases produced by poor and insufficient nourishment, and bad air, I think can hardly be disputed. “With respect to the class of society among which infants are chiefly affected with this disease,” says the writer mentioned above, “it may be safely asserted, that it is almost un-

known among the rich or affluent, or even those whose circumstances bear them uniformly above the reach of want. It may sometimes occur [among these] from bad feeding or neglect, but it is generally the concomitant of poverty, and for the most part only seen in the cellars and confined apartments of the poor and unhappy, where privation of nourishing food and impurity of atmosphere unite their depressing powers."

Some authors have affected an indifference to the psoriasis of infants, apparently considering it to be nothing more than a scurfy conglomeration of excretions and exfoliations, and no true scaly disease. It would seem probable that the cases which have come under the notice of these writers have been principally of the nature of the variety named pityriasis, or perhaps occasionally of incipient porrigo. The detailed and particular observations of Mr. Plumbe, however, based very evidently upon ample experience, are a sufficient proof of the frequent occurrence, at least among the children of the poor, of genuine psoriasis, characterized by all the usual signs.

The disease is so obstinate in its nature, that though it may have been the direct result of the debility and want of tone which spring from the causes just mentioned, it frequently survives the state which originated it, and continues to exhibit its characteristic symptoms long after the tone of the system has been restored. This circumstance frequently contributes to the misconception of the nature of the disease, lately mentioned as operating so cruelly against the happiness of the child and its parents.

TREATMENT.

Lepra, or psoriasis, being a rare disease, seems to merit no very considerable notice, beyond the meeting a reasonable demand for an accurate description. I

have seen but few cases, in the course of my practice, and these were of a comparatively trifling nature. Wilson, in his smaller work on cutaneous diseases, speaking of the treatment proper for leprous affections in general, judiciously observes that strict attention should be paid to the rules of health, especially to cleanliness; and recommends "dry friction of the eruption, exercise of the body to perspiration, and the shower-bath, conjoined with an abstemious diet;"—this he declares will often cure the disease after all other means have failed. He observes also that "brushing the patches with a flesh-brush until they become tender" is a useful remedy.

Dr. Neligan, in cases of old or debilitated persons affected with lepra (and indeed it is the weakly or the aged who contribute the greater number of instances), employs stimulating diaphoretics combined with tonics,—attaining, by somewhat different means, the same end with Wilson, viz: invigoration of the system, and determination to the surface. He also recommends the use of tepid, or sometimes hot vapor baths, once or twice in a week ; also cod-liver oil for scrofulous children. In the aggravated forms of psoriasis he employs the more active alteratives, such as arsenic, iodine, etc., alone or in combination.

M. Cazenave speaks very highly of the operation of the carbonate of ammonia, in psoriasis: the dose being about two and a half grains, in a table-spoonful of syrup of sarsaparilla, once to thrice in the day. If unfavorable symptoms be produced,—such as head-ache, colic, diarrhoea, etc,—the medicine is discontinued for a few days.

Dr. Neligan observes that "when the eruption is local, and attended with symptoms of irritation or inflammation, soothing unguents, as those containing chloroform, preparations of lead, zinc, &c., or poultices

prepared with the lead wash, often prove highly serviceable; and in the more chronic cases, when neither inflammation nor inflammatory irritation is present, stimulating applications are occasionally required." Of the latter he considers the iodide of sulphur ointment (formula given elsewhere) as the best.

Mr. Plumbe, while paying due attention to the constitution—which he holds to be importantly concerned in most cases of lepra—considers the range of valuable local remedial agents to be limited; and indeed he mentions but one as of especial merit,—observing: "it does that in lepra, as well as in many other cutaneous diseases less connected with the constitution, which no other application will do, viz.: it quickly subdues the inflammation of the cutis, and produces a healthy cuticle." He also remarks that "in all cases where it has been had recourse to, in conjunction with the tonic plan of treatment of lepra, the dark hue of the surrounding inflammation changes more rapidly to a brighter red, and the scales are more readily detached." This is certainly high if not extravagant praise: and he also considers it, when used in connection with sedative washes, and proper constitutional treatment, a powerful remedial agent in lupus. Its formula is as follows:—

B. Hydrarg. subm.,	
Plumbi superacet.....	a 3ss.
Ung. hydrarg. nitrat.,	
— cetacei.....	a 3ij. M.

In psoriasis (and of course in lepra also) he greatly favors the use of the bath, either the common warm water bath, or the sulphur vapor bath, conjoined or not with the exhibition of the arsenical solution,—or in lighter cases, with gentle mercurial alterative.

M. Rayer favors external applications, and is sceptical of permanent benefit to be derived from the use of

active alteratives,—arsenic in particular. Vapor baths, ointment of white precipitate, etc., are his favorite measures, in psoriasis *discreta* and *diffusa*; and he considers a palliative plan of treatment as the “only one available in cases of inveterate psoriasis, especially where its subjects are individuals belonging to the laboring classes of society. . . . The local varieties of psoriasis offer the same curative indications as the general disease. Fomentations, baths, cataplasms, emollient and narcotic unguents, are all useful when the skin is red and painful.”

CHAPTER XXI.

DISEASES CHIEFLY OF A LEPROUS CHARACTER.

Icthyosis; Stearrhaea; Elephantiasis.

ICTHYOSIS.

THE confusion which exists, in regard to the nature of several of the disorders described in this work, extends also in the direction of our present subject. Wilson regards icthyosis as consisting essentially in a modification of the sebiparous secretion, which, increased in quantity, forms the scales and incrustations that have occasioned the title of the disease. Accordingly he places it under the head of “Alteration of Secretion,” a branch of his Third Division, in a “natural system” of classification of cutaneous diseases. He “formerly regarded certain of these exodermal productions as hyper-formations of epiderma, resulting from enlargement of the papillæ of the derma,” but professes to have since “obtained clear evidence that all the forms of icthyosis are of the same nature; that they are, in fact, concretions of altered sebaceous substance.” In this view Wilson stands almost if not entirely alone. The very

general opinion is that the nature of the exodermal substance is euticular. The French dermatologists consider ichthyosis as a lesion (or morbid change) of the epidermic secretion. Gustav Simon (who is followed by Neligan) regards the affection as an hypertrophy of the epidermis, the result of increased development. He therefore places it in the order "Hypertrophiae." It would perhaps be a difficult task to draw a line of absolute separation between this view and that of the French writers, since it is probable that none of the latter would claim that the sole point of difference between a healthy cutaneous tract and one afflicted with ichthyosis is a thickened condition of the latter. There must be a cause for this condition ; and in searching for it we shall perhaps find ourselves constrained to presume a lesion of the organs which secrete the cuticle.

In viewing the affections classed in the order Hypertrophiae, we may define the connecting circumstance as a hypertrophied or morbidly thickened state "of any or all of the anatomical elements which compose the tegumentary membrane."** The question is not whether the general term really involves the disorders which it nominally includes, but whether the thickening of the integuments is the circumstance proper to be selected as a sign of relationship between a number of diseases ; and if so, whether it should not include certain other diseases which present an hypertrophied condition of the same textures. Why should not lepra (or psoriasis) come under the head of hypertrophiae ? Hypertrophy is the really important characteristic of lepra, as much as of ichthyosis : but the former is placed in the order "Squamæ," because the epidermis, so largely and morbidly secreted, is to some extent desquamated ; whereas, the most that should have been done, by way of dis-

* Neligan.

tinguishing the one from the other, would have been to have subdivided the order hypertrophiæ into two or more species, and thus accorded the more emphatically desquamatory affections the privilege of a distinction based on their peculiar manifestations, while denying that desquamation in itself constituted a ground of radical classification. One point of distinction between the "sealy diseases" and iethyosis has been thought to be the absence, in the latter, of morbid heat, of pruritus, and indeed of any particular symptom of inflammation in the skin. Rayer is one of those who take this view. But other writers have made positive statements to the contrary. Thus, Mr. Plumbe declares that there is "always—*always* irritation present, showing itself in some form or other." Both M. Rayer and Mr. Plumbe are familiar with the disease; the former has seen "above forty cases" of *general* ichthyosis, while the latter's method of treatment in the disease has been regarded as of importance, by other authors. This method is *based* largely on the theory of inflammation of the parts, and is uniformly successful. Its inventor likewise declares the inflammation to be apparent, and also that the irritation is frequently felt by the patient. We must conclude either that the disease presents different characteristics in different countries, or that M. Rayer is a not very careful observer: the latter seeming to me by much the more reasonable supposition.

"Whether iethyosis is general or partial," says Dr. Neligan, "the superficial layers of the hypertrophied epidermis are constantly being *shed as a fine mealy desquamation*, or, when softened by a warm bath, may be rubbed off with the hand, but are again rapidly renewed." The desquamation here mentioned bears some resemblance to the same phenomenon in the leprous disease which he terms pityriasis: a stronger link, however, in the chain of connection between ichthyosis and

the leprous diathesis is afforded in the following report of Franz Simon, a celebrated scientific dermatologist, who therein gives the results of his analysis of the exaggerated cuticular substance:—"The scales were of gray or black color; when placed in water they softened, and on then placing a section under the microscope I found that the abnormal structure was formed of *compressed epithelial scales*. On incineration the scales left an ash, containing carbonate and phosphate of lime and peroxide of iron; the latter was in such abundance as to communicate a yellow color to the ash. The ash yielded by the incineration of the ordinary thickened skin on the hands and feet is perfectly white, and contains a mere trace of peroxide of iron." Gluge, another microscopist who confirms the statement of Simon, says that he found the scales above mentioned to be composed of epidermic cells. These scales, like yet unlike the healthy cuticle, have but to be *desquamated*, and ichthyosis will be generally recognized as a leprous disease. The distinction which would separate them, to me seems trivial: at any rate, it is plain that Willan and Bateman had strong grounds for their original classification,—stronger perhaps than those of Rayer and others for dissenting from it.

Mr. Plumbe treats ichthyosis and *warts* under the head of "Fungoid Diseases." In the light of the investigations of M. Simon, this association cannot but be deemed unfortunate. Mr. P. would seem to have been influenced to some extent by the somewhat similar external appearance of the two afflictions.

Ichthyosis, like other squamous diseases, doubtless originates in chronic inflammatory action of the vessels which secrete the cuticle. Its external appearance is not that of the skin of a fish, a likeness which might be inferred from its title, and does not closely resemble any living surface, except that perhaps of an old wart, or,

more remotely, the skin of an elephant, or sometimes the leg of a fowl. In some of its phases (for it does not always present exactly the same appearance) it might be compared to a broad low wart divided every way by fissures. It is sometimes congenital, and when not so, usually makes its appearance within a few months after birth, and continues through life. It begins with a noticeable morbid thickening of the cuticle, generally around the joints, or on one of the lower limbs, the affected portions becoming dry and harsh, but not inflamed or irritable. Presently, however, marks of slight inflammation are observed on the surface adjoining the diseased part, and the patient is often sensible of an increased heat in that region. From this, the affected part becomes elevated above the general level, and numerous cracks or fissures extend in every direction, dividing it as described above; its color also deepens, and is soon a dusky or dark brown: often it appears much darker than it really is, from the dirt which insinuates itself into the myriad cracks and there defies soap and water. The disease would seem to be neither constitutional nor the result of a previous local irritation. It is sometimes hereditary, being handed from male to male (the females escaping it) through a number of generations. One variety of this disease distinguishes itself with elongated appendices resembling prickles or spines; and it may be nearly universal. Persons thus afflicted have been exhibited, under the title of "porcupine men," being covered from head to foot with something very like little blunt quills. Says M. Rayer: "I have tried the effect of maceration upon portions of the skin of individuals who had labored under ichthyosis. The small compartments of which the epidermic layer consists, and which give the malady its principal external characters, are readily detached under the form of a grayish or blackish membrane, impregnated with pigmentary

matter in the porcupine species, little or not at all colored in the other varieties of the affection. These small compartments do not overlap each other like the scales of a fish; the title ichthyosis taken in its literal signification would lead to an erroneous anatomical idea. Tilesius made a few experiments on the nature of the thick black superficial epidermic layer, which was detached in squamæ from the bodies of the brothers Lambert ["porcupine men"]. Buniva has since assured us that the squamæ were nothing more than gelatine, become hard and solid from its combination with a certain quantity of phosphate and carbonate of lime. M. Delvaux has discovered that it also contains a little carbonate of iron and traces of silica; consequently that the squamæ of ichthyosis supplied the same chemical principles as the nails, the hair, and the epidermic productions generally. I have myself demonstrated experimentally that this substance possessed physically and chemically the same properties as the epidermis. Dr. M. Good, who designates it improperly by the title of *incrustation*, supposes it to be formed by cutaneous secretions containing an excess of calcareous matter. Under the first epidermic layer, in ichthyosis, which is commonly colored by pigmentary matter, a second is found of a dirty white or grayish hue."

The various accounts as given above are somewhat discrepant, and can only be reconciled on the theory that the analyses were in some cases imperfect, or that the composition of hypertrophied cuticle is not always the same. M. Rayer further observes that the lines or furrows of the skin are "much more decided in ichthyosis than in the standard condition. The papillary eminences, which are also much more remarkable than on the healthy skin, are sometimes extremely large; it is indeed to the hypertrophy of these that Tilesius ascribes the production of the epidermic spines in the

porecupine men."* M. Rayer further observes that according to Tilesius the cutaneous follicles, in the case of the brothers Lambert, "were obstructed, and full of a thick substance. These organs," says he, "were but little apparent, and in many places imperceptible, in the great majority of the subjects affected with ichthyosis whom I have examined. The hair and hair-bulbs were found remarkably enlarged in a particular case, the history of which is given by Dr. Martin."

On the scalp, in this disease, the epidermis is comparatively but slightly thickened. As might be expected, it results in the almost total destruction of the hair; that which may chance to survive, is but weak and thin.

Cases of ichthyosis are not uniformly of the formidable nature which has been herein described; occasionally it consists in nothing more than a fine mealy desquamation from a surface which, though dry, rough, uneven, and more or less discolored, is yet but little hypertrophied: and it is said that this state of the affection may so continue from birth to old age. It is not difficult, I apprehend, to perceive, in this form of ichthyosis, a resemblance to a mild form of psoriasis: the variety, for instance, often, though incorrectly, styled pityriasis. In both, the skin of the affected parts is slightly raised, is more or less discolored, often of a yellowish or reddish brown, or grayish brown hue; both exhibit a constant desquamation or exfoliation, though the character of this is not the same in each; and neither is attended by marked constitutional symptoms. This similarity, though I do not offer it as particularly striking, I think is noticeable: and it should be observed that there is a corresponding similarity also between the severer forms of the two diseases. Pruritus

* Dr. Copland is also of this opinion.

and inflammation are not inseparable from the milder form of psoriasis, and on the other hand they have been known to accompany ichthyosis,—as witness the positive and unusually emphatic statement of Mr. Plumbe, quoted a while since. Some of the symptoms common to the two disorders would seem to differ but in degree; and as for the actual desquamation of true scales, on which so much stress is laid by several writers, more importance may I think be attached to the undoubted *efforts* of nature to throw off genuine scales: whether those efforts be entirely successful or no, may possibly be a minor question. No one can read the statement of the eminent *savant*, M. Simon, in relation to the real structure of the hypertrophied cuticle, and fail to see that so far as the *intentions of nature* may be supposed to be understood, the desquamation of true scales is as much a part of the theory of ichthyosis as of lepra itself.

A peculiar warty growth—termed the “warty ulcer of Marjolin”—is occasionally developed in the cicatrices of wounds and burns, and presents a general external resemblance to ichthyosis: it however does not spread, and never appears in parts which are in a normal state.

STEARRHŒA.

M. Rayer, in the course of his remarks on ichthyosis, observes:—“I think it necessary to solicit attention to a mistake which must be readily fallen into, seeing that two excellent observers have committed it. Bateman* has given a figure in his atlas under the title of *ichthyosis of the face*, of a case which is certainly one of *ceruminous or sebaceous deposit* from diseased action of the follicles; and Dr. A. T. Thompson has detailed a case of the same description under the same erroneous title.

* “Delineations of Cutaneous Diseases.” London, 1817.

In this affection of the follicles, however, which I was the first to notice particularly, the part of the integument affected becomes at first, as it were, unctuous or oily ; the secretion of the sebaceous follicles then increases ; the fluid thrown out upon the surface acquires additional consistency, and finally forms a kind of squamous crust or layer of greater or smaller extent. Soft at first, and adhering but slightly, it by and by acquires hardness, and then cannot be removed without occasioning very considerable pain. The skin under this sebaceous deposit is of a vivid red ; the orifices of the follicles appear dilated, and sometimes distended with concrete sebaceous matter."

From these hints of M. Rayer, modern dermatologists have evolved a new disease, with the title of "Stearrhœa."* After what is said above in connection with the names of Bateman and Thompson,† it may be supposed that the symptoms out of which the new disorder has been constructed are comparatively rare ; but Wilson—whose views of ichthyosis originally conformed with the definition I have given—subsequently changed his mind and gave it as his opinion that the abnormal formation in question was composed of "concretions of altered sebaceous substance :" from this the most obvious inference is that the stearrhine effusion is really common, and that the cases latterly coming under his observation were of that complexion. His definition, however, as applied to ichthyosis, cannot hold, if for no other reason than that the analysis of Franz Simon is against it ; besides, it is preposterous to attribute ichthyosis *spinosa* to a secretion of sebaceous deposit. Again, ichthyosis often appears where there are few or

* From στεαρ, "suet," and ρέω, "I flow."

† Dr. Thompson's work on cutaneous diseases is posthumous and is edited by Dr. Parkes. At the time of his decease he had reached no conclusion on this point.

no sebaceous glands. But it is apparent that in external characteristics the two afflictions are not necessarily dissimilar, and one might in certain cases readily be mistaken for the other.

Neligan defines stearrhœa as a disease of the sebaceous follicles, characterized by "augmented secretion and discharge of their natural contents, the follicles themselves and their excretory ducts being at the same time somewhat hypertrophied." This is at once comprehensive and precise. "The increased secretion," he further observes, "may consist merely in an excessive amount of the natural oily matter or smegma destined for the preservation of the skin from external irritants, or in its discharge on the cutaneous surface in a vitiated condition, where it concretes and forms a thick adherent layer, varying in color from a rich yellow hue to nearly black." Out of this variety we have *S. simplex*, *S. flavescentis*, and *S. nigricans*. The first is simply what is known as an oily state of certain parts in which the sebaceous follicles abound—such as the scalp, the ears, the nose, and the face generally. The skin of those affected with it is coarse and sallow, and frequently exhibits the pustules of acne *punctata*. It indicates a constitution more or less unhealthy, and is thought to be an accompaniment of the serofulous diathesis. The second, *S. flavescentis*, was by Biett termed acne *sebacea*, because so closely connected in nature with the ordinary pustular acne.* Wilson in one work styles it "Inflammatio follicularum," and in another *S. flavescentis*. It consists of augmented and altered secretion from the sebaceous follicles, collecting on the surface, in the same regions as in *S. simplex*, as a yellowish, or sometimes greenish-yellow layer, which, though sometimes soft and fluent, is usually more like the secretion termed

* See chapter on "Acne."

"ear-wax," and grows hard and tenacious, and likewise deeper in color; it is eventually of a brownish hue, and, when very hard, cracks in various directions, like the crust of ichthyosis. It re-forms quickly, as often as removed, and proves a very obstinate visitation. Sharp tingling is often felt in the parts, and not infrequently stinging pains, with heat and pruritus. When the crust has been removed, the surface looks red, and frequently inflamed; and if the mouths of the sebaceous follicles be carefully examined they are found to be enlarged, and overflowing with the substance of which the crusts are formed. *S. flavescentis* is usually accompanied by bad digestion and other indications of imperfect health. The third variety of stearrhœa, *S. nigricans*, is very rare. The excretion, as its name implies, is black, even when it first exudes from the gland. It is thinner than the effusion of *S. flavescentis*, and possesses the property of staining everything it comes in contact with. It is a more vicious form of the disease than *S. flavescentis*, being accompanied with a good deal of irritation and pain, and also constitutional disturbance. Dr. Neligan—from whom I have derived most of the facts embraced in the foregoing description—mentions the case* of a young lady afflicted with *S. nigricans*, in whom the excretion was arrested by local treatment; on which she immediately began to vomit a black substance, and to discharge it also through the bowels and kidneys. Dr. G. O. Rees, having made an analytical examination of the excretion from the diseased surface, found it to consist in albuminous and fatty matters, alkaline chlorides and phosphates, lime, iron and carbon.

S. simplex is both hereditary and congenital; but the

* Communicated by Mr. Teevan to the *Medico-Chirurgical Transactions*, vol. xxviii., p. 611.

other varieties, which may or may not be hereditary, appear only after the age of puberty, though they are not incident to those advanced in life. Exceptions to this are extremely rare. Females suffer from them far more frequently than males.

Stearrhœa would seem to bear a relation to ichthyosis somewhat analogous to that which connects—or is made to connect—*porriga favosa* with *P. furfurans*. It is happily infrequent, and its description might be thought hardly worth the space I have given it; but the comparative rarity or frequency of a disorder has really but little to do with the question whether it shall be described. The plan of the work demands the description; and to be of use, that description must be full and accurate. These observations apply also to the following account of a very rare disease,—rare, at least, in the temperate regions.

ELEPHANTIASIS.

This term, which is from the Greek, *ελεφας, ελεφαντος*, “an elephant,” is commonly, in modern times, applied to a peculiar and extraordinary enlargement of the limbs, generally the inferior members, which are so enormously swollen as not infrequently to resemble, in size and shapelessness, those of an elephant,—whence the title of the disease. The enlargement here spoken of is usually accompanied by hypertrophy of the deeper integuments, and not commonly of the epidermis; and œdema, or a hardened state of the hypertrophied integument, is not a usual symptom, as in ichthyosis. Elephantiasis is not only incident to the limbs, but sometimes occurs to the face, the scrotum, etc., and (very rarely) to the scalp. By the addition of a supplementary title the term is made to refer to a number of diseases more or less widely diverging, as will be apparent from the following brief notes:—

Elephantiasis Græcorum, or Elephantiasis of the Greeks, is thought by many to be the true ancient leprosy. This I am myself inclined to doubt, believing that the latter corresponded more nearly to *lepra alphoides*, which I have elsewhere described. In most of the detailed symptoms *E. Græcorum* is not unlike the Pellagra of Lombardy. In the latter there is less hypertrophy of the parts, and the aspect of the sufferer may be less hideous; but the effects, upon mind and body, are substantially the same in both, and in many features the two diseases are not dissimilar. The disease is still endemic in tropicale climates, and, in a somewhat modified form, is known to this day in Sweden and Norway under the name of "Spedelsklied." Several hundred years ago there were "Leper Hospitals" in many of the European countries, established for the isolation and better care of persons afflicted with this disease, which obviously was then by far more common than it has been in later days. The title "Leper Hospital" still clings to an infirmary in Waterford, Ireland, the name having thus outlived the scourge whose former frequency, and whose terrors and inflictions, had made its establishment an act of Christian kindness as well as of public necessity. Though the affection, unfortunately for its victims, was in those days deemed contagious there is reason to think this belief had foundation only in the endemic nature of the disease—which, springing from causes that brought it to the door of all the miserably poor alike, might easily have worn the appearance of infection: deceiving even the learned of that simple age, so unscientific and superstitious and therefore apprehensive and panic-ridden. As might be expected, both from the obstinacy of the disease and the ignorance of physicians, its treatment was inefficient, the best result being usually but a temporary check, or factitious cure.

"In *Elephantiasis Arabica*," observes M. Rayer, "the subcutaneous cellular tissue has been found harder in proportion as it was nearer the dermis. The adipose tissue has been known to become enlarged in a very extraordinary manner. I have also found the cellular tissue infiltrated as it is in dropsies of long standing. M. Fabre has seen the subcutaneous cellular tissue converted into a thick, hard, almost fibro-cartilaginous layer, presenting in several places small ossified plates, adhering so closely to the aponeurosis* of the leg, and to the nerves and vessels which traverse it, that it was impossible to separate them."

An account of the different layers of hypertrophied skin observed by M. Rayer and M. Gaide, in several dissected subjects, is given in the present work in the form of an illustrative note appended to the chapter on the anatomical structure of the skin. (Chapter VI.) As it may be thought interesting also in the present connection, the reader is referred to it anew.

Dropsical affections, in E. Arabica, are sometimes caused by the obstruction or in some cases the obliteration of veins—more particularly the venæ saphenæ. Arteries also are sometimes found ossified, but more rarely than veins. In one of the subjects dissected by M. Rayer, the heart, the lungs, the stomach, the liver, and the kidneys, were each disordered, the three last mentioned very much so.

It may be observed, in concluding this account of E. Arabica, that it is frequently preceded, accompanied, or followed by some one or more of various acute and chronic diseases, such as eczema, E. Græca, erysipelas, lichen, certain ulcerous disorders, and by various alterations in the veins and arteries.

* Aponeuroses are white, strong membranes, composed of interlaced fibres, like tendons in texture, and connect, in some instances, the muscle with the bone.

Elephantiasis of the hairy scalp is a rare occurrence. M. Rayer alludes to two cases described by M. Ricord in the *Revue Médicale*, vol. ix., p. 13, and these are the only ones I have known to be mentioned in medical works. It is possible that the disease may occur to this region oftener than might be inferred from the foregoing,—passing under some other designation, or being looked on as some sort of nondescript disorder, without precedent or character. Or, on the other hand—for I confess I know nothing of it experimentally,—even the two cases of M. Ricord may have been some other (perhaps cognate) disease, and elephantiasis may never really attack the scalp. But for its relation to ichthyosis and leprosy, I should have hesitated to include it in the present work, except in the informal shape of an allusion or brief comparison. As the case stands, the consideration of elephantiasis in this connection is at least interesting, and, in the light of M. Rayer's statement, perhaps justifiable on logical grounds.

E. Arabica is likewise termed Tyriasis, Elephas, E. Indica, E. Arاب, Maladie glandulaire, Ladrerie, etc. It is by some also styled Lepra Arabum, and it is thought probable that the "Yava Skin" of the Polynesians is substantially the same disease.

The Elephantiasis of Cayenne, or *Mal Rouge de Cayenne*, is "characterized by red and yellow spots, occupying the forehead, ears, hands, loins, etc., afterwards extending and becoming scaly, with deformity of the parts where they are seated, particularly of the face; and ultimately producing cracks, ulcers, caries, and sometimes death."* It is evident that the disease is akin to E. Græcorum, being manifestly leprous, or perhaps at times syphilitic in its nature, and is in no way entitled to an association with true elephantiasis. The same may be said of the "Elephantiasis of India," a disease very similar in character. The "Elephantiasis of Java," though beginning with "large white tumors on the toes and fingers, resembling scrofulous tumefactions," results similarly, and is likewise a leprous disease. "E. Italica" is the pellagra. Several diseases known on the coast of Malabar, and

* Dunglison.

in Ceylon and the islands of Japan, under the common names of "Andrum" and "Perical"—to which correspond "Endemic Hydrocele" and "Pedarthorace"—are really analogous in their nature to E. Ara-bica. The "Senki" of Japan is somewhat similar to that disease, as is also the "Mouth Canker" (*Labri-sulcium*), or "Cheilocace," of Ireland.

TREATMENT.

Ichthyosis.

Ichthyosis seems to be related more or less intimately to a scrofulous state of the system. Thus, Neligan states that all the examples he has seen "have been in persons, whether children or adults, of a well-marked scrofulous diathesis." And Professor Banks, who lately published an account of two cases successfully treated by him, speaks of the marked connection which he observed between ichthyosis and the strumous* diathesis. The proper internal remedies, therefore, are those which are suited to this condition of the system. They are mentioned in various places in the present work; as, for instance, in the prescribed treatment for certain cases of eczema and porrigo. The method employed successfully by Professor Banks† was as follows:—"Cod-liver oil was employed topically, and at the same time administered internally; at bed-time the patients were placed in a vapor-bath, and the surface of the body well rubbed afterwards with the oil, a flannel dress being always worn next the skin, with the view of keeping the surface constantly impregnated with it."

Dr. Neligan had several cases (those of young children), and was successful with three,—a fourth being,

* Scrofulous.

† The degree of severity of the cases is not indicated in the passage from which I have derived the account. The original source is the *Dublin Quarterly Journal of Medical Science*, New Series, vol. xii., p. 80.

when he wrote, still under treatment. In two of the three cases the disease was confined to the lower extremities; in the third, it involved also the upper. The treatment of cases occurring to the scalp has not, so far as I am aware, been given to the public. As I have had no experience in this disease, I am unable to fill the hiatus satisfactorily. Warm fomentations, however, with gentle friction, frequently resorted to, combined with a proper constitutional regimen, are obvious items of treatment in these instances. I am of the opinion that cases of stearrhœa occurring to the head may have sometimes been mistaken for ichthyosis of that region, but do not doubt that the latter may visit the scalp and has really done so. Dr. Neligan's method of treating the two successful cases mentioned by him may be conveyed in his own language:—"The remedies I used were the iodide of potassium and iodine, from one to two grains of the former, and from a sixteenth to an eighth of a grain of the latter, according to the age of the child, given once daily, in from one to two ounces of the decoction of elm-bark, made with the recent inner bark, stripped from the growing tree; and an ointment, containing twenty grains, gradually increased to one drachm, of the iodide of potassium, a drachm of glycerine, and an ounce of prepared lard, with which the affected parts were well anointed morning and evening; an alkaline bath—one drachm of carbonate of soda to each gallon of fresh water at the temperature of 90° Fahr.—having been used for fifteen minutes previously to each inundation, the body being well rubbed with a flesh-brush while in the bath. An inner ealico dress was worn constantly, and milk diet was strictly enforced."

Mr. Plumbe cured two cases of ichthyosis by pressure and the constant application of a long roller kept constantly moist with cold water. The pressure was effected

by strapping the affected parts tightly with adhesive plaster. This method—praised and employed in some disorders by other practitioners—seems to have originated with Mr. Plumbe.

Wilson observes that “in ichthyosis spinosa the spines are to be softened by warm alkaline ablutions or baths, and then some stimulating application made to the skin. . . Constitutional remedies, such as the symptoms may indicate, are to be used internally, as alteratives, tonics,” etc. I should object to the *alkaline* character of the ablutions or baths above recommended, however appropriate it might be in his ichthyosis *squamosa*.

Stearrhœa.

Wilson’s treatment of ichthyosis *squamosa*—which I assume to be substantially the same as his stearrhœa *flavescens*—is mainly embraced in the following passages:—“The first indication . . . is to remove the scaly concretion; and the second, to excite the sebiparous glands to healthy action. The former object is to be effected by means of the warm bath, or warm fomentation, rendered alkaline by subcarbonate of soda or potash, several times repeated. [The *bath*, or *fomentation*, is the thing to be repeated]. The second [object] may be attained by frequent ablutions with warm or cold water, succeeded by brisk frictions with a rough towel, sea-bathing, and astringent lotions. A useful application to the surface, in this affection, will be found in the following ointment:—

R. Elder-flower ointment.....	3 j.
Sulphate of copper or zinc.....	3 j. M.

To be used twice or thrice in the day.

The lapis divinis, in the form of lotion or ointment, is also a useful remedy. During the progress of the local treatment, it will be desirable to administer some

laxative medicine, and to regulate the diet of the patient."

Dr. Neligan looks first to a restoration of the bodily vigor, by "the internal administration of alteratives, combined with alkalies, such as the hydrargyrum cum ercta with dried carbonate of soda, or cod-liver oil with lime-water, according to the circumstances of each case; the latter combination is readily taken in milk, from one to four drachms of the oil being given three times daily, in one ounce each of lime-water and new milk, previously mixed. As soon as the state of the digestive organs is improved, or the menstrual function restored, preparations of iodine—especially the syrup of the iodide of iron, or the iodide of potassium in some tonic vegetable decoction or infusion—will be prescribed with benefit. Of course the employment of purgatives, when requisite, should not be omitted. The local applications that are found most useful are gently stimulating and astringent lotions and ointments. The affected surface should be sponged three or four times a day with the spirituous lotion recommended for acne simplex,* an ointment containing ten grains of the iodide of potassium to the ounce of cold cream being applied at night, or a solution of the iodide of iron,—two grains to the ounce of rose or elder-flower water, and dilute citrine ointment may be used." He then comments on the necessity of perseverance in these means; speaks unfavorably of the use of caustics; and observes that "when the crust of effused sebaceous matter is hard, dry, and adherent to the surface, it should be removed by the application of poultices or of water-dressing, previously to the use of topical remedies."

* "Two drachms of oil of lemon and half a drachm of oil of rosemary in a pint of rectified spirit." It may be diluted, when necessary, with elder-flower water.

A part of the above code of directions I consider superfluous in most cases of stearrhoea. I think the exudation will generally be found to accompany ordinary good health, and that it is occasioned by rather gross habits of feeding, and the immoderate use of fatty articles of food. An improved system of diet, with the use of alkaline lotions and astringent applications, I consider to be the main features of the necessary treatment.

CHAPTER XXII.

THE STEATOZOÖN FOLLICULORUM. THE HAIR-EATER.

THERE are many persons in whom the sebaceous and hair-follicles, from one cause or another, secrete an inordinate quantity of fatty or oily substance, which keeps the skin constantly covered with an unctuous deposit. This condition is hardly worthy the name of a disease, though it rarely accompanies a perfectly healthy state of the system,—seeming to indicate the scrofulous diathesis. The reader will find it fully described (Chapter XXI.) under the title of “*Stearrhœa simplex*.” (See also the chapter on Acne.) Sometimes the apertures of the follicles become obstructed, and a trifle of the contained matter, oozing to the surface, becomes blackened by the action of the air and the collection of dust upon it; this affection of the follicles is known among dermatologists under the appellation of “*Acne punctata*.” Everyone is familiar with the phenomenon. Many consider the black point to be the head of a worm; and this notion derives strength from the appearance of the inspissated matter which may be squeezed out from the follicle: it possesses sufficient consistency to maintain the form imparted to it in the follicle, and thus very

naturally confirms the impression alluded to. But though living creatures of this formidable size do not exist within the structure of the integuments, it is now known that under favorable conditions minute insects do appear therein. So long ago as the twelfth century, an insect was ascertained to be present in the vesicles of the disease termed Scabies (commonly known as the itch), and was even described.* And in 1842, Dr. Gustav Simon, a physician of Berlin, published† an account of a minute animalcule termed by him the *Acarus follicularum*, which he had discovered in large numbers, in the ordinary secretion taken from the sebaceous glands of the nose. Wilson, upon seeing the account, began a series of experiments which materially extended our knowledge of the creature. I am indebted to his work for the drawings which accompany this account. Wilson observes that Dr. Simon's descriptions were imperfect; for instance, he had "overlooked several points of entomological importance in the structure of the animal;" and, moreover, had failed to investigate the mystery of its birth and growth. "I found myself under the necessity of changing the name given to the animalcule by Dr. Simon," says Wilson, "as being founded on a wrong view of its structure and zoölogical position. As a temporary appellation, I

* Scabies resembles eczema (which see) in its external features, especially at its beginning, when the two diseases differ mainly in the amount of itching which respectively attends them: in scabies the pruritus is often fearfully great, depriving the sufferer of rest and comfort for weeks together. The extraordinary irritation of this disease is presumed to be a result of the presence of the little insect before-mentioned, which is a species of *acarus*, termed the *Acarus scabiei*, and sometimes *Sarcoptes hominis*. Mouffet, an English writer in the middle of the seventeenth century, described the creature with remarkable accuracy; in our own day, an interesting account of it has been given by Erasmus Wilson.

† Muller's *Archiv.*, for June, 1842.

termed it *entozoön folliculorum*; but, upon more mature consideration, and in reference to its habitat and food, I have thought the name *steatozoön folliculorum*, that is, the ‘animal of the oily product of the skin,’ more appropriate and correct.”*

FIG. 12.



FIG. 13.



FIG. 14.



FIGS. 15 AND 16.



a.



FIG. 12. The stentozoön folliculorum, viewed upon the side.

FIG. 13. The animal seen upon its under surface. In this view, the head and breastplate are shown.

FIG. 14. The animal viewed upon its back; the head being drawn back into the chest.

FIGS. 15 AND 16. a, an egg of the same animal; b, a young specimen, undergoing the process of casting its skin.

Various tables of measurement have been prepared, with the view of affording a definite notion of this anatomy of animated nature; but as they are widely discrepant, I experience a trifle of difficulty in conveying a just idea. Dr. Simon states it to be from the

* Dr. Neligan attributes the discovery of the true entomological character of the animalcule, and the change of its name to “*Steatozoön folliculorum*,” to Einsight.

0.085th to the 0.125th of a line (German measurement) in length, and to average about the 0.020th of a line in breath. According to Wilson, the longest are "little more than a quarter of a line in length ; that is, forty-five, placed end to end, would measure only one inch." In form and shape, in the perfect state, observes this author, "they are very like caterpillars, and have a distinct head with feelers, a chest with four pairs of legs, and a long tail. The whole body is so transparent that its interior may be easily seen, and the animal always occupies the same position in the oil-tube, the head being directed inwards, and the tail towards the aperture of the tube, as though it had crept into that situation from without. In some persons these singular creatures are larger than in others, and in some than in other parts of the face. So much is this the case, that an eminent naturalist, to whom I showed figures of their varieties, considered the difference between the two, not merely in length but also in shape, to amount to a specific character." The cause of this difference, in length at least, he believes to be "a relative diversity in the caliber of the oil-tubes in different situations, associated with a various degree of density and nutritive property of the oily matter." In the same group, also, he adds, "we find eggs, embryonic forms, and young, all mingled together in confusion." Professor Stockton has given a full and graphic description of the animaleule, evidently after close observation. He observes that "the breast, which is the broadest and thickest part of the animal, is flattened on its under surface ; it is composed of four broad circles, which are joined by a connecting membrane on the sides. These circles are somewhat connected in their diameter [whatever this expression may mean], particularly at the upper part, so that the outline of the chest in this situation has the appearance of being slightly fluted, and

the circular structure of the breast permits a certain degree of movement in this part of the creature. The legs are eight in number, four attached to each side of the breast. The movements of the legs are a forward and backward movement. The abdomen is somewhat variable in point of length, but generally more than two or three times longer than the breast. It is flattened on its under surface, and convex above, and tapers gradually from its base to its extremity, where it terminates in a rounded point. It is composed of a series of extremely narrow circles, which overlap each other. When examined on either surface, the margin of these circles presents the appearance of a regular succession of transverse lines, and when seen along the outline, they give to it the character of a serrated edge. The extremity of the abdomen is sometimes lengthened out into a small point, which is permitted to move with considerable freedom, and to curve in any direction." The head, which is composed of three organs, two lateral and one intermediate, "is connected to the forward circle of the breast by a loose membrane, marked on its surface by lines which indicate its susceptibility of being thrown into folds. This membrane is intended to admit of retraction and extension, and by this means the entire head may be drawn in and buried deeply beneath the level of the membranous fold, here described, so that the head is entirely lost to view, and the animal looks decapitated, the fold of the neck membrane forming a perfectly straight border in front. . . . When the animalcule is alternately retracting and extending its head, the impression on the eye of the observer is that of a creature one while furnished with a well-defined head, and the next instant decapitated back almost to the level of the anterior segment of the thorax."

"The animalcule of the skin," says Wilson, "is found

in the oil-tubes whenever there exists any disposition to the unnatural accumulation of their contents; it is found, in numbers varying from one or two to twenty, in the substance of the little grub-like cylinder which is squeezed out by the pressure of the fingers, and this in an apparently perfect state of health of the skin, or, more correctly, without any appearance of disorder, for the skin cannot be said to be in perfect health when its functions are performed in a torpid manner. Now, as in the majority of mankind, and certainly in all the inhabitants of cities and large towns, the skin is more or less torpid in its functions, so the presence of this animal in the skin is the rule; its absence, the exception. I have found it at all ages, from youth to old age, more numerously, it is true, at the latter than the former period, and in great and remarkable numbers during sickness. Under these circumstances, I see no other conclusion open than to assume that it performs some beneficent purpose in the economy of the skin; that purpose being, according to my belief, the disintegration of the over-distended cells, and the stimulation of the tubes to perform their office more efficiently. In corroboration of this view, is the fact that these little creatures increase in numbers when the vital powers decline, so that, when the energies of the system are reduced by disease, and when the skin, participating in that reduction, is unable alone to fulfil its functions correctly, these little beings are produced to aid it in its work."

I have no objection to this amiable theory of Mr. Wilson, so far as it relates to the follicles of the face; but my observations have led me to look upon the little *steatozoön* as rather a nuisance than otherwise, when it makes its *début* on the hairy scalp. It is well known that in this region the sebaceous follicles often coincide with the hair follicles, and in many other cases empty their contents into the latter. This, if it is a good thing

for the hair, is unquestionably a good thing also for the insect, which manifestly prefers gnawing off a hair to any other kind of exercise: though I would not say that swimming in its native element may not possess occasional attractions, since nature is nature, after all. I have often found master *steatzoön* glued to a hair-shaft, just above the surface of the scalp—to which point he may have been conveyed from within the follicle by the natural growth of the hair,—and have observed with admiration the affectionate tenacity of his hold, which usually withstands not only stiff brushes but the finest comb, and seems eternal. It unfortunately happens as a general thing, that this impression (so far as it may relate to any thing mortal) finds justification in subsequent facts; for nothing but the absolute destruction of the hair, root and shaft, seems to satisfy the ardent creature, which clings closer and closer, and at length arrives at such a pitch of fervor that the hair, I must presume, is fairly *squeezed to death* in its embrace.

The regions selected by this destroyer for the exercise of its faculties seem to be the top or apex of the head, and the tract where the hair fringes the neck. I have never found it elsewhere. Whenever it appears, the hair becomes dry and brittle, and, if naturally dark, assumes a yellowish hue or a variegated mixture of the old and the new shades, and presently begins to fall. A peculiarity of this destructive action is, that the hair is never afterward reproduced. It may be that having eaten its way into the hollow interior of the shaft it pours in some poisonous substance which finds its way to the roots and destroys the apparatus employed in evolving the hair, or paralyzes the nerve of the papula that vitalizes the atoms which enter into its original formation.

The little pest which is able to achieve this deplor-

able result, is of rather a blueish tinge, and resembles a nit in size, but not in color or shape. Though he triumphs signally over such means of a mechanical nature as are employed to remove him, he quickly succumbs to a solution of Hyd. Bichlor., a few applications sufficing both to destroy him and counteract the effects of his poison.

CHAPTER XXIII.

ACNE, AND KINDRED DISEASES.

THOUGH the disease termed Acne, strictly speaking, does not come within the formal limits of this work, which professes to refer exclusively to the hair and the various affections of the parts which propagate it, yet it is true enough that the disease in question does now and then affect those parts, and moreover it is so intimately connected with several other affections of a more general nature, and is so common a disorder, that few of my unmedical readers will regret the space I have here devoted to it.

Foësius and others derive the word from the Greek, *ακμη*, and the learned writer above mentioned is of the opinion that it should therefore be restored to its original orthography, *Acmé*, which in this connection would signify *vigor*, as the disease chiefly affects those who are in the vigor of life. In its simpler form, acne is apt to affect young people in whom the capillary circulation is lively, and who consume large quantities of food. Dermatologists are not perfectly agreed concerning the nature of acne. While some do not doubt that it *generally* arises in the sebaceous follicles, others affirm that it is to be referred exclusively to inflammation in those organs, arising from the obstruction occasioned

by their contents being grown too hard to reach the surface readily. Of these is Mr. Plumbe, who on this point expresses himself with even more than his usual positiveness. It may at least be said that the pustules of acne abound especially in those regions in which the sebaceous follicles are most numerous,—namely, the forehead, tip and alæ of the nose, and parts adjacent, the chin, also the breast and back, the parts last mentioned having least. The pustules never appear thickly on the scalp, but are more than usually painful in that region. Cazenave declares acne to consist in “a diseased condition of the follicular secretion;” but Wilson describes it as “an inflammation of the sebiparous glands and adjacent tissues, with or without alteration of secretion.”

Young persons in whom the system is in a state of plethora, and the appetite is somewhat gross, are liable to an accumulation of the oily secretion of the sebaceous follicles. Sometimes this secretion exudes unchanged on the surface, as fast as secreted, and occasions that greasiness of the skin which is so familiar to all. (See chapter entitled “Stearrhœa.”) Should it become somewhat inspissate, or should the organs of the part perform their office but languidly, the sebaceous substance would naturally tend to accumulation in the follicle, and would soon be incapable of flowing out.—The facts seem to be in accordance with this theory. The mouth of the follicle becomes distended; the oily matter, attracting dust from the atmosphere, and itself growing dark from exposure, presents the appearance of a black speck on the skin. The speck is popularly supposed to be the head of a small worm, or maggot; and this fancy is strengthened by the fact that when the adjacent parts are compressed with the fingers a worm-like mass is forced out. This, however, never presents the appearance of life. It is nothing more than the

hardened sebaceous matter of the follicle, retaining the shape given it therein, and of course sufficiently resembling a small worm or maggot to give rise to the fancy I have alluded to.

The black points in question have occasioned the distinguishing title of *Acne punctata*; and the state which presents them may be termed the mildest possible form of acne. Indeed, the condition hardly deserves to be styled a disease; for this is all there is of it, and it leads to nothing worse.

As the accumulated hardened sebaceous substance is really become foreign matter, which the system must ultimately get rid of, it is apparent that the skin of such as exhibit the phenomena of *acne punctata* is not particularly susceptible, or liable to inflammation; for otherwise we should look for some kind of active protest of the parts affected, against the presence of an irritating foreign substance. Thus, the above form of acne would scarcely be exhibited by a person, for instance, of a sanguine temperament and florid complexion;* for the accumulation of hardened substance in the follicles would soon produce inflammation of the

* "The skins of different individuals differ greatly in the number, as well as size, of the sebaceous follicles; and hence, in a state of health, the complexions of some are said to be more clear than that [*sic*] of others; the copious distribution of the black spots which have been described, giving a dirty and less healthy appearance to the part, while their minuteness in size and numbers leaves the agreeableness of the red and white unimpaired. It is evident, however, that the simple appearance of such spots ought not to be considered as a disease, or as in any respect a deviation from a state of health. The most desirable change which can be effected, therefore, where they exist to an unpleasant extent, is that which frequent ablution and moderate friction only can produce. A constant attention to these latter points will usually prevent, where the skin is not very thickly furnished with follicles, any discoloration of the kind described; but the whole contents of the follicle, should this not be sufficient, may be easily squeezed out with a moderate degree of force, in a manner familiar to all. As a matter of precaution, this latter step ought to be

parts, and the consequent tumefaction would close the mouth of the follicle. The inflammatory process, once begun in a susceptible skin, must continue till the irritating foreign substance shall have been disposed of, one way or another. The common course exhibits first a small red pustule, with a hard base, increasing slowly in size, and when untouched not particularly painful; on the apex of this acuminate or cone-like elevation a small white speck appears; this is the pus, formed by the morbid process begun by the inflammation, exhibiting itself beneath the distended skin. As the pus accumulates, and the skin softens, the cone gradually becomes globular, and of a yellowish tint, the base, however, still retaining its original reddish tinge, and continuing hard and painful to the touch. Suppuration at length occurring, the accumulated pus exudes, together with the hardened sebaceous substance which originated the inflammation; and though a thin brownish crust is formed by the escaping matter, the sore is far on its way to recovery.

The phenomena of these eruptions vary extremely, to correspond with the various circumstances which govern them. Thus, the skin of some persons is by far more sensitive than that of others,—more irritable and prone to inflammatory action. A thick skin will resist the action of the matter beneath it longer than a thin skin. A languid circulation, or an indolent state of the organs concerned in the revolutionary action, may sometimes greatly prolong the growth of the pustule, or even prevent its ripening altogether,—the matter (usually, in these cases, insignificant in quantity) being gradually

followed with respect to all such follicles as may exhibit the blackened surface described, where others are in a state of inflammation, as a preventive measure; and the worm-like substance which the contents of the follicles produce by this operation is easily removed without the use of any kind of instrument.”—*Plumbe.*

absorbed, and therefore not forced to the surface. Sometimes we may observe a large number of the pustules appearing simultaneously, and distributed over those regions in which the follicles abound; but usually the number is inconsiderable. It should be observed, that however thickly they may be sown, they are always distinct from one another, though usually they are found aggregated in small patches.

This variety of the disease is termed *Acne simplex*. It is seen particularly in young persons,—those who are subject to it obtaining a greater freedom from its attacks as they approach maturity. It is common in the spring and autumn, but less frequent in the summer, and comparatively rare in winter. Successive crops of the pustules appear, and the various stages of their growth and decline may often be seen at one time, as exhibited on the same surface. No constitutional disturbance commonly accompanies the eruption, though it is undoubtedly at times a symptom of temporary disorder of the digestive functions. It is not wise to attempt its repression,—the philosophic course being, to further the tendency of the pustules to suppuration,* at the same time regulating, more strictly than is usual, the diet and habits. Nor is the use of stimulants, in active cases of the disorder, any more wise than that of repellants; since they must tend to increase the irritation of the parts and thus both aggravate the eruption and increase the annoyance of the sufferer.

The disease we are considering is often far more formidable when it attacks adults. A young man who,

* That this course is the one most consistent with the designs of nature is evident from a variety of circumstances. The matter to be eliminated is foreign and poisonous; repression of the eruption constrains an absorption of it into the system, which has just made so marked an effort for its expulsion. Besides, it is well known that various internal disorders are promptly relieved by the occurrence of a cutaneous eruption.

from any of the causes mentioned, continues for years subject to attacks of *A. simplex*, may, as he approaches maturity, find less and less occasion to congratulate himself on that circumstance: the integuments, under the influence of inflammation so often recurring, eventually become altered, and no longer maintain their pristine integrity of structure; the original fairness of the external skin disappears, and what before were evanescent pustules perhaps are now indurated tubercles, lasting for weeks, aggravated by the slightest excitement or increase of temperature, appearing in large numbers, and succeeding each other with great rapidity. The skin between the various patches partakes of the inflammation; tumefaction is apparent in the vascular tissue of the derma, and frequently extends downward even to the subcutaneous cellular tissue. Many of the tubercles, when they have at length disappeared, through maturation or absorption, leave a livid stain on the skin, and an ineffaceable depression from the general level of the surface.

This constitutes *Acne indurata*. The phenomena are not uniformly the consequence of the circumstances detailed above, nor are they always precisely of the nature described; but in general terms this form of acne may be defined as *A. simplex* aggravated by various circumstances of a constitutional nature, and rendered morbidly chronic. It now and then happens that acne on its *first* appearance exhibits the characteristics of the chronic form,—particularly when affecting persons of mature years. It also frequently seems connected intimately with still another form of the disease, now to be described, termed *Acne rosacea*,—otherwise *Gutta rosacea* or *Rose-drop*, *Brandy-face*, *Carbuncled face*, *Couperose* or *Cuperosa*, *Dartre pustuleuse couperose*, etc. This affection, which confines itself to the face, commonly exhibits its more striking peculiarities in the

instance of such as are accustomed to high living and its usual concomitants. It begins, in most cases, as a red spot or patch on the skin, that soon exhibits a number of small pimples which grow slowly, and become daily harder and more inflamed, and sore to the touch. When they at length mature, a moderate effusion of a serous fluid takes place, usually accompanied with blood, forming a dry hard scab, whence, from under the edges, a trifling issue of thickened pus occurs a few days later. The pimple does not disappear, in consequence of giving way, its base being still hard and immoveable; and it contributes for a long while to the unsightliness of the disorder. The surrounding discoloredation also, which changes to crimson-violet and sometimes spreads enormously, is very loth to depart, often remaining for years, and exhibits the superficial veins in a varieose state and of a shade so peculiar that they are always painfully distinct. Fresh crops of pimples constantly recur, pursuing a course similar to the first. Almost every excitement, local or constitutional, occasions a temporary aggravation of the symptoms; and thus, though the disease is not necessarily the fruit of indulgence, it becomes an indifferent gauge of the various excesses which the subject permits himself,—a circumstance which the public are usually not slow in seizing on, though it is clear that much injustice may thus be done,* since many who indulge themselves perhaps far more grossly, escape the objuration and ridicule which the others incur, in consequence of carrying no outward extraordinary sign of inward potatory excitement.

This form of acne sometimes becomes so modified as to assume the characteristics of *A. indurata*, as lately

* A consideration which does not usually seem to influence a community in such cases.

described. It not infrequently affects the nose to the almost total exclusion of the remaining follicular surface. The deeper tissues become hypertrophied; the surface, unequally swollen, grows shapeless and un-sightly; in short, the nasal organ under these circumstances, is an enormous, veiny, inflamed, hideous monstrosity.

M. Alibert includes the various forms of acne in his extensive collocation of cutaneous affections termed "*Dartres*,"—styling *A. simplex* "*Dartre pustuleuse miliaire*," *A. punctata* "*Dartre pustuleuse disseminée*," and bringing *A. indurata* and *A. rosacea* together under the cognomen, "*Dartre pustuleuse couperose*." M. Rayer applies the title "*Couperose*," or *Cuperosa*, to all the different forms of acne. He observes that *cuperosa* is curable "when the subject of it is young, the eruption recent and slight, and the pustules not very numerous;" but on the contrary, "when it shows itself in adult age, is connected with chronic affection of the digestive organs, or when it is hereditary, of long standing, and of large extent, the best treatment rarely succeeds in preventing the development of the pustules, or causing the resolution of the tubercles." Though entertaining so decided a view of the intractability of the disease, this author evidently considers that the symptoms may be very materially alleviated, since he gives particular directions in regard to diet and the general treatment of the disorder. "In persons affected with *cuperosa*," he observes, "the diet should consist of white meats, fresh vegetables, and ripe, juicy fruits; they should carefully abstain from fatiguing exercise, excessive study, and from remaining in places of high temperature," etc.*

* "The sanguine temperament of youth, and bilious temperament of adult age, predispose to *cuperosa*. Its connection with chronic inflammation of the stomach and alimentary canal, is frequent, and

M. Rayer, it will have been perceived, shares the common opinion, that cuperosa or acne is hereditary. It may perhaps be questioned, however, whether this character is not to some extent imaginary. As the original formation of the skin is commonly like that of the parent, and the same habits of life which may have occasioned the disease in the case of the latter are often continued in the descendant, it is not marvellous that acne should exhibit itself in the same family for several generations. Perhaps a decision of the question depends greatly on what we shall consider to constitute an hereditary taint or predisposition. A mere similarity in the conformation of the skin is not surely enough, since very probably the habits of the one affected are usually the great exciting cause of acne.

easily detected. Its dependence on an affection of the liver is more rare and difficult to ascertain, notwithstanding the old and repeated assertions to the contrary. Women, more frequently the subjects of cuperosa than men, are usually affected by it at the age of puberty, and on the cessation of the menses. This eruption may also supervene on the suppression of the menstrual flux, and disappear on its return; or it may coincide with simple dysmenorrhœa. Cuperosa is seldom aggravated by pregnancy; but often decreases or disappears on gestation. This disease is hereditary, and may be transmitted to several generations successively. It has been supposed that cold, damp climates, have a remarkable influence on the development of this eruption, as it is more frequent in the North of Germany and in England than in meridional countries; but this may be explained by the abuse of spirituous liquors, indulged in by the people of the north, which is a less equivocal cause than their climate.

"The excesses of the table, some vicious habits, more or less acute moral affections, certain occupations which require a long continuance of the same attitude, causing a determination of blood to the head, are the common cause of cuperosa. Lastly, the contact of certain paints and astringent liquids, the use of cosmetics, practised by women in the decline of life, are more direct and immediate causes, the action of which is particularly evident when there is no predisposition to the disease."—*Rayer*.

The term "cuperosa," in the above extract, refers to acne in general.

SCROFULOUS DISEASE OF THE FOLLICLES.

There are still other circumstances which are to be considered, in order to a full understanding of the phenomena of follicular disorders. We have seen that certain forms of these affections often owe those characteristics which make them differ from acne *simplex*, mainly to peculiarities in habits and in the structure of the skin,—and also to differences in temperament. Still more remarkable variations are occasioned by the scrofulous diathesis,—or, in other words, that state, constitution, or natural bias, which predisposes the system to affections of a scrofulous nature. As the passage is not without interest, apart from its connection with this subject, I will transcribe some observations of Sir Astley Cooper, on the nature of scrofula.

“The most concentrated idea I can give of scrofula,” he says, “is, that it is *congenital or original debility*; and this state of the body is marked by peculiar characters both in external formation and internal structure. The external characteristic of a scrofulous constitution is the state of the skin, which is peculiarly thin and delicate in its structure. It is usually of a light color, but this is far from being uniformly the case, for it is sometimes dark; but in either case, if it be gently pinched up, it will be found extremely thin when compared with that of a strong healthy child; and, as this state of delicate fibre of the skin denotes a similar internal structure, it becomes an easy criterion of the general conformation of the body. This thinness and [this] delicacy of the integuments are the reasons that the cheek often exhibits a fixed and florid color, which is considered as a great beauty by the passing observer, but is regarded as a sign of weakness by the intelligent mind; it arises from the blood of the arteries being seen through their delicately-constructed coats and their

thin cutaneous covering. From the same flimsy delicacy of the skin the veins are seen permeating the cellular tissue; and the darkness under the eye, which is so common an attendant on this kind of conformation under slight indisposition, arises from congestion in the veins and difficulty in the free return of blood. From weakly vascular action also springs the thickness of the lip, as the blood is retained in this very vascular structure. Flaxen or delicately silken hair often attends this state of the skin, and in those whose hair is red, there is a strong natural propensity to scrofulous complaints. Black hair and a dark skin are, therefore, generally signs of a healthy formation, but if the skin be thin it is not a guarantee from a scrofulous disposition. The thinness and delicacy of the skin exist in each of its constituent parts: the cuticle, from a blast of cold air, chaps and desquamates, the sun's heat parches and cracks it."

A constitution may be scrofulous, and yet the disease termed Scrofula may never have made its appearance. But this scrofulous tendency, it is apparent, must often modify the symptoms of disease, rendering many disorders obstinate and vicious which would quickly have succumbed had the parts affected been supplied with a healthful amount of vital energy. "There is scarcely any disease of the skin," says Plumbe, "which may not become influenced by the scrofulous diathesis, so far as to deviate from its usual course." Impetigo, he asserts, is cured with far greater difficulty, under such circumstances, and lepra becomes "very often totally unmanageable. . . . The scrofulous form of acne," observes Mr. P., "very commonly continues unyielding to any medical means or measures with which I am acquainted, for years, and yet ultimately disappears spontaneously."

In justice to the original and ingenious author from whom I have just quoted, I will endeavor, in a brief

space, to afford some adequate notion of his views of two prominent forms which scrofulous disease of the follicles assumes. In the first, "the disease commences on the chin or forehead, involving the follicles at first no more than to the extent of a few lines in circumference; one or more of these patches of inflammation are surrounded by minute pimples, which, on examination, are clearly constituted by inflamed follicles." From this the eruption spreads to a greater or smaller distance, and "a uniform thickened red condition of the integuments" ensues, which is extremely obdurate, resisting for a long while the most approved medical appliances. A case cited by Mr. Plumbe in illustration had been preceded by "extensive disease of the cervical glands,"* and also by "true serofulous ophthalmia." This form seems (to me) to be related to acne indurata. The second, says our author, "is far more insidious, and approaches usually in the guise of the merest trifle of a pimple on the cheek. A slight degree of tingling or itching accompanies it; if it is scratched it bleeds a little, and a bit of court-plaster is often put on it from day to day with the expectation of its healing without trouble. A minute gummy exudation, forming a pellicle of scab, is seen. This drops or is picked off in a day or two, and is immediately succeeded by another of increased dimensions; a little blood oozes from the surface, and, when the latter is cleared with a little violence it is found of a dark venous hue, and in only the smallest conceivable degree imbedded beneath the surface of the surrounding parts. This condition of things may go on for weeks, and yet the patient, from the little trouble it gives, does not obtain professional advice. The sore arrives at the dimensions of a split pea, but even then it not unfrequently happens that the surgeon considers it,

* Glands of the neck,—the usual seat of scrofula, or "King's Evil."

as the patient has done, a trifle. There is little or no redness or apparent inflammation in the adjacent skin, nor is the latter in any degree thickened; and at this period the worst which can be said of it is, that it is a languid-looking sore which will not heal." Every kind of specific appliance fails of ameliorating the symptoms; caustics, a dernier resort, only enlarge the area of affected surface. The sore steadily, though usually very slowly, enlarges, and deepens, extending to the subcutaneous cellular tissue,—and all without apparent irritation or inflammation of the adjacent parts. "The surrounding skin, pale as marble, exhibits, on the edge of the sore, a regularity equal almost to that of an incision." From time to time, on different parts of the pale and glassy surface,—over which, with a microscope, the minute artery and vein may be seen wandering, tranquil as though the parts were perfectly healthy,—little pellicles of new skin appear, "which, for two or three days spread and increase in size in every direction, promising the formation of a bit of really sound skin; when, on looking anxiously on the morning of the fourth you see the new skin perforated in the form of numerous pin-holes,—the absorbents have been nibbling it away!"*

In conclusion, Mr. Plumbe observes that a "favorable termination or cure of either of these two forms is hardly to be expected. In the first, the constitutional vice stands in the way, although there appears on the part—evinced by redness, heat, etc.—sufficient powers of repair. In the second, it is almost always evident,

* The description of "Jacob's Ulcer," as given by the professor after whom it was named, bears a striking resemblance to this account of the second form of scrofulous ulceration of the follicles, by Mr. Plumbe. It is termed *Lupus devorans*, by Neligan, and is considered a lupoid affection by Rayer. Prof. Jacob, however, regards it as a malignant ulcer.

on minute examination of the vessels on the surface of the sore, that their coats are so extremely delicate as to be unable to bear the impetus of any thing beyond a very weak circulation, a circulation totally inadequate to the demand where repair is called for."

LUPUS. (*Eating Tetter; Noli me tangere*, etc.)

Lupus is by most writers divided into two forms, *L. exedens* and *L. non-exedens*,—the latter being superficial, while the former attacks also the deeper-seated tissues. Dr. Neligan has *L. superficialis*, *L. serpiginosus*, and *L. devorans*. Lupus superficialis usually appears on the most prominent part of the cheek, in the form of a slight elevation of the skin, insignificant in size, a little inflamed, soft to the touch, and, if pressed firmly, rather painful. After a time—perhaps several weeks or even months—it exhibits a thin, hard, brownish scab, but is apparently in no other way altered. Should the scab be removed, the sore would appear superficially ulcerated, the edges seeming to be slightly hypertrophied, and presently another scab, like the first but firmer, would make its appearance. The sore increases in size very slowly, whether neglected or interfered with, and after a further interval of several months the disease appears to have completed its ravages on the spot originally affected, whence the dry scab or crust falls, and the spot exhibits the white and seamed appearance of the scar produced by a burn.* From this starting-

* Mr. Plumbe, from whose account this does not materially differ, observes that when the disease has continued to extend till the original tubercle has wasted away, the surface thenceforth gradually assumes a healthy condition, "if care has been taken to alter the state of the constitution." A sensation of heat and tingling, he observes, "is felt during the whole course of the disease till this change takes place." In concluding his account, he says, "such has been the history of it in numberless cases which have come under my notice."

point the disease advances slowly, though generally from one side only, and, except when irritated by scratching or by inflammatory applications, preserves its original undemonstrative character. Its track is marked by the disfiguring white scar above described, which remains through life. Irritation occasions painful ulcerative action, but the symptoms are rarely or never formidable. This form of Lupus is quite rare. It is termed by Copland *L. superficialis non-tuberculosis.*

Lupus *serpiginosus*, named, by Alibert, *Esthiomenos ambulans vel serpiginosus*, seems to be in effect a more thorough and vicious manifestation of the disease just described. Alibert's term, *Esthiomenos*,—from $\epsilon\sigma\theta\epsilon\omega$, “I eat,”—is a very significant one; for this form of lupus is decidedly voracious, and is long in reaching a surfeit. It occurs both to the face and the scalp, often extending from one part to the other, and is occasionally also seen on the limbs and the trunk. The earlier symptoms of *L. superficialis*, if aggravated by rather more inflammation and a more positive form and consistency of the tubercular elevation, and a sense of heat and itching, would seem to announce *L. serpiginosus*. The cirenlar elevation of the former, takes in the latter the shape of a small livid or dusky red tumor, of about the same or perhaps a trifle greater circumference, and it is perhaps as indolent in the one form as in the other. This apparent inaction, however, is more deceptive than we have seen it to be in the former instance; underneath the inoffensive exterior we usually find that absorption or consumption of the deeper tissues is going on: the truth indeed eventually demonstrates itself. After a long interval, an issue of purulent matter is observed; the external portions now exhibit marks of ulceration, and eventually there is a general discharge of the contained matter,—revealing the fact that the

surrounding parts have been undermined by the absorptive process before mentioned. Whether there had been one or several tumors at the outset, at this stage others of a similar character appear, in the vicinity of the original eruption. The absorptive process continuing, the œdematosus* portions of integument lying between the eruptions ultimately give way, and thus a large deep ulcerous sore is formed, here and there masked by a hard brownish seab. Healing reluctantly, in the central portions first,—its theatre of action marked by an irregular depression of greater or less depth and of a white glistening aspect,—it meanwhile continues its eneroaching progress at the circumference, as in the original instancee, its track usually presenting the appearance of irregular rings. It not unfrequently happens that the disease traverses the same tract repeatedly ; in these cases, as it would be natural to infer, the cicatrix after every fresh attack is deeper and more irregular than before.

Lupus serpiginosus “is usually,” observes Neligan—from whom (and from M. Rayer) the substance of the foregoing description is mainly derived†—“attended with more or less local pain in all its stages, which is much aggravated at times by attacks of acute inflammation, when it spreads more rapidly, but the constitution very rarely participates, those affected with the disease being often apparently in excellent health, even although it may have lasted for years. It is always of a chronic nature, and its duration is extremely pro-

* The accumulation, by infiltration or other means, of a serous fluid in the interstices of the areolar texture, produces a swelling of the parts, to which the term *œdema* has been applied.

† My experience of lupus—a rare disease in this country—is so extremely limited that I am compelled to avail myself of the descriptions of others who have enjoyed better facilities for acquainting themselves with its characterictics.

longed. When it terminates in cure, the intra-dermoid ulceration ceases to spread; healthy granulations, at times rather exuberant, form on the surface, and cicatrization of the affected part takes place; the annular edges being elevated over the healthy skin, and of course much more over the cicatrized portion, and being of a bright red color, which they retain for a long time, contrast remarkably with the shining white aspect of the latter: much disfigurement consequently results."

Lupus *devorans* may be styled the superlative of three degrees,—the positive and comparative being afforded by the two varieties just described. It has no very formal style of announcing itself, and is as likely, at the outset, to resemble *L. surpiginosus* as anything else. It may begin on one of the alæ of the nostrils, or the tip of the nose, or even on the palate. "In whichever way the disease may commence," says Neligan, "the resulting ulceration presents the same characters; its tendency is to spread from the surface inwards, not unfrequently undermining in its progress the healthy integuments before it attacks them, and being attended with a foul, unhealthy, purulent, often ichorous discharge." It is characterized "by destructive ulceration of the various structures situated beneath the skin—*areolar* and *adipose* tissues, *muscles*, *tendons*, *cartilages*, and *periosteum*,* being equally destroyed; the bones even do not escape, for where they are laid bare caries attacks them." This disease is sometimes so enterprising as to "devour" a whole nose in a month or six weeks; but commonly it is much more deliberate, though rarely less certain on that account. When it manifests unusual greediness it is styled *L. vorax*.

* The fibrous white substance which unites the bones with the neighboring parts.

The nature of lupus has always been a source of difference, with the more prominent dermatological writers. It is rarely seen among the "better" classes; hence, a series of intelligent observations, beginning with the first symptoms of the disorder, and taken by a physician thoroughly familiar with the temperament and physical history of the patient, may perhaps be classed among the rarities of medical experience. M. Rayer observes that "it seems to be more common in the country than in towns: and, perhaps, also to attack women more frequently than men. The poor inhabitants of Haute-Auvergne who live on acrid food, such as old cheese, tainted meats, etc., and house with their cattle, are often attacked with it." This seems probable enough. The above-named author defines lupus as "a chronic cutaneous inflammation which usually appears in the shape of external tubercles of different sizes, singly or in clusters, of a livid color and indolent character, followed either by ichorous* and phagedenic† ulcers, which become covered with brownish and usually very adherent scabs,—lupus *exedens*; or by extensive changes in the structure of the skin, but without preliminary or consecutive ulceration,—lupus *non exedens*," etc. "As to the diseases of the skin and other affections which existed previously to the development of lupus," he observes, "the whole, with the exception of scrofula, perhaps, appear to be strangers to its cause." In his diagnosis, however, he discriminates learnedly between scrofula and lupus.

Copland (and after him Neligan) considers lupus to be of a scirrous or cancerous nature, and accordingly places it in his order "Canerodes." Rayer apparently

* Ichor is properly the serum of the blood. It sometimes, in disease, exudes as a thin, aqueous, acrid substance.

† "A phagedenic ulcer is one which rapidly eats and corrodes the neighboring parts."—Dunglison.

considers cancerous and lupoid tubercles as quite distinct, alleging that the former are "evolved among subjects more or less advanced in life," whereas *lupus exedens* (which most nearly resembles cancerous affections) "almost never appears in persons past the prime of life." He also states that the lupoid tubercles are unaccompanied with pain from the first. Neligan's order "Cancerodes" includes but two diseases, *lupus* and *kelois* (or cheloid tumor), the latter being extremely rare. These affections, he observes, "possess a certain degree of malignancy, inferior to that of true cancerous affections, yet in many of their features bearing much resemblance to them, especially in being usually characterized by a slow and insidious ulcerative process, often attended with severe stinging pain, and by a marked tendency to return in the same or in some other part of the skin, after they have been apparently cured, or even after the diseased portion of the integument has been excised."

It will have been observed, that the statements of Rayer and Neligan are quite inconsistent, since one asserts that the "slow and insidious ulcerative process" in *lupus* is "often attended with severe stinging pain," while the other states that the tubercles of *lupus exedens* are "unaccompanied with pain from the first;" also, that during the ulcerative process which destroys the nose, "the patient scarcely makes any complaint;" and he elsewhere observes, of *lupus non exedens*, that "the patient does not experience any pain." For my own part, I am constrained to think that Dr. Neligan, in this instance, has either been too anxious to establish his point, or not sufficiently discriminating in his diagnosis. Some observations of Mr. Plumbe also bear on this question.

"It [lupus] has been compared," says he, "and probably sometimes confounded, with seirrhous [cancerous]

ulcerations of these parts; but the features by which it may readily be distinguished from such affections are:

“1st. Its situation; cancerous disease of these parts usually first occurring on the lower lip.

“2d. The uneasiness belonging to it is in no case described to be worse than are comprehended under the general designations of heat, itching, tingling, or smarting, while scirrhoue ulceration is accompanied by severe darting pains.

“3d. Diseased enlargements of the contiguous glands do not often make their appearance in its train, even though the disease has existed for years, which is not the case with cancer.

“4th. The surface of the sore is never occupied by fungous granulations, or has thickened and everted* edges, but retains its peculiar character to the last.”

Of these several considerations, the first seems the most weighty, and the fourth the most significant.

This does not exhaust the argument; but what has already been said is, with me, sufficient to greatly discourage the fancy that there is any particular relationship between lupoid and cancerous affections.

The various eminent writers to whom I have now and then alluded, in this connection, differ on other points beside the one just mentioned. It is stated by Dr. Neligan that many patients afflicted with lupus appear to be in excellent health, though the disease may have lasted for years. It seems obvious to remark that what one person would term “excellent health,” another might consider but indifferent health: to appear in good health, many need only to be in good spirits. It is asserted by Mr. Plumbe—who declares he has treated “numberless cases” of lupus—that in *all* of them “*a cachectic† state*

* Turned outward.

† Cachexia signifies depravity of the system; a bad habit of body.

of system was evident at the commencement." This author likewise, in another place, reminds the reader that the disease may outlive the habit of body that occasioned it or accompanied its rise. In still another part of his work he observes of lupus in general, that while those cases which have originated in inflammation of the cartilages are probably of serofulous origin, "the more common forms seen in England [and the same is doubtless as true of the United States] are the result of disorders which the habits of the individual have induced." He considers that for every case in which a serofulous diathesis is manifest, "twenty others come under our notice where the subjects are accustomed to indulgences in spirituous potations, and habitual violence to the digestive organs. . . At the period of its development, moreover," he concludes, "and even in its advanced stages, as it occurs in this country, where much distress of mind, and a considerable aggravation of constitutional disorder has been observed, the glandular system has seldom been affected, or any other mark of scrofula existing; a fact which in itself may be considered almost conclusive against the opinion in question."

The views of an intelligent practitioner, of large and varied experience in the departments which are the subject of his observations, are always worthy respect,—more especially if he be a man of independence, preferring his own philosophy to the opinions of any school or set, and manifestly the equal of any in critical acumen. I have frequently deferred to Mr. Plumbe, in this work, on those points where his experience transcends my own, and his philosophy commends itself strongly to my judgment; and on the question of the nature of lupus—a most obscure subject, as the reader will have seen—I am more inclined to side with him than with any other of the writers with whom I am acquainted.

I may state my own theoretical views of lupus briefly, as follows:—Where it occurs in apparently well persons, in middle life, there is really, in most cases, more or less of cachexia, or of constitutional taint; or else, it depends on some habit of the system more or less obscure. It is peculiar to the follicles; is in many instances allied to acne *indurata*, and then usually owes its variation to some vicious propensity in the blood, inherited, or the result of irrational habits long continued; that low vitality and a feeble circulation tend to modify acne into incipient lupus; that the various forms of lupus differ but in degree, and demand precisely the same constitutional treatment, the local varying to suit the degree of intensity of the symptoms, etc.; that so-called lupus, affecting regions of the body which are nearly or quite destitute of follicles, is commonly ecthyma and not lupus; that a rational and temperate way of life will usually insure the system against its attacks; that treatment, to be efficient, should be prompt and persistent, and should invariably be both local and constitutional.

Chronic debilitation of the cuticle, so manifest in lupus, belongs, in a greater or less degree, to many other cutaneous disorders,—more particularly to the squamous affections, and those distinguished by hypertrophy of the integuments. Various affections of the scalp and hair take their rise in the same condition, as was shown in a previous chapter.

TREATMENT.

Though I have devoted a liberal space to the *description* of these diseases, I do not propose to follow my own example in what I shall have to say of them in this connection. In the treatment (mainly constitutional) of lupus, in particular, small reliance can be placed on

general directions; furthermore, to make these sufficiently exact to serve in even its better known forms, would be a difficult task. As for acne, a permanent cure, in persons below the age of twenty or twenty-five, cannot generally be looked for. Topical applications possess usually but a temporary if any virtue; for the next season, or the next recurrence of the exciting cause, will probably bring it forward again, in all its original activity. Considering that in many cases there seems to be an hereditary disposition to this cutaneous disorder, which the slightest exposure or imprudence may engender, and that it may often be traced to gross habits, or to derangement of the digestive organs accompanied by constipation, it is evident that the course which gives the best promise of a good result is that which insists first of all on moderation and regularity in the habits, a restoration of healthy functional action in the stomach, and constant care against subjecting of the cutaneous surface to violent extremes and sudden changes of temperature or to any action which irritates it or otherwise promotes inflammation.

Saline cathartics have been prescribed in this disease, in its simpler form, for persons of a sanguineous temperament and active cutaneous circulation,—as, for instance, various saline mineral waters. In the case of strong young persons, with whom the disease is particularly active in the spring, Dr. Neligan states that “a general bleeding, practised just before the period of the expected appearance of the eruption,” will sometimes prevent its outbreak. However efficacious this resort may be, I should say the remedy was many times worse for the patient than the disease.

When pustules of acne *simplex* appear, let them be freely opened, and their contents pressed out. If the eruption be general, temperance in eating and drinking is indicated, and sometimes the use of aperient medi-

cine. After washing, let some cooling lotion be sparingly applied. The following is given by Dr. Neligan: Two drachms of oil of lemon and half a drachm of oil of rosemary, in a pint of rectified spirit,—to which, in case of local inflammatory action, add twice or four times the quantity of elder-flower water.*

If the eruption be general, a warm bath every second or third day, and friction with a flesh-brush, is recommended by the same author; in chronic cases, “where the pustules are indolent, and there is rather deficient than increased cutaneous capillary circulation,” he considers the use of sulphurous baths—composed of the natural sulphurous waters, or made by dissolving four ounces of potassium in thirty gallons of water—to constitute the most efficient plan of treatment.

Some of these observations will apply as well to acne *rosacea* and *indurata*; but it is evident that more active topical remedies are essential in these forms, and far greater care is required in matters of diet and exposure. Various moderately stimulating ointments are employed, after the tendency to local inflammation has been subdued by constitutional means, and the use of soaps changed for that of bicarbonate of soda in weak solution. The selection of remedies is properly governed by the nature of the case.

In ordinary cases of acne I have used with good effect a lotion composed of one drachm of aromatic spirits of ammonia, and three grains of corrosive sublimate, in eight ounces of distilled water: to which, when the skin is hard and rough, add half an ounce of glycerine.

In acne *indurata*, according to Dr. Neligan, “the best local application is the iodide of sulphur in the form of ointment, the strength of which may be gradually in-

* For a better one, see further on.

creased from fifteen grains to half a drachm to the ounce of lard." I have never employed it.

CHAPTER XXIV.

SYCOSIS, OR MENTAGRA.

(*Ficus*; *Roseola ficosa*; *Acne mentagra*; etc.)

THIS ancient name, having survived the numerous changes which have affected its signification, has at last, like porrigo, been brought to mean something which cannot readily be resolved into something else. Every disease of a pustular nature, occurring to the region on which the beard grows, has, at one time or another, been termed Sycosis. And although this region has generally been considered its special if not exclusive seat, it has been said to affect also the face and scalp. Dr. Bateman, one of the earlier writers on cutaneous diseases, and one of the fathers of dermatological science, defines sycosis as "an eruption of inflamed but not very hard tubercles, occurring on the bearded portion of the face and on the scalp, in adults, and usually clustering together in irregular patches." As the account of this author seems to approach nearest to that more modern one which I intend to recognize as the true description, I will here devote a little space to some extracts from it, which may tend to strengthen the later authority to whom I have just referred. Dr. Bateman observes of sycosis *menti** (which is the variety occurring to the chin):—"the tubercles arise first on the under lip, or on the prominent part of the chin, in an irregularly circellar cluster; but this is speedily followed by other clusters, and by distinct tubercles, which appear in succession

* Otherwise, *S. barbae*, *Mentigo*, *Varus Mentagra*, *Mentagrophyta*, *Chinwelt*, *Barber's Itch*, etc.

along the lower part of the cheeks up to the ears, and under the jaw, towards the neck, as far as the beard grows. The tubercles are red and smooth, and of a conoidal form, and nearly equal to a pea in magnitude. Many of them continue in this condition three or four weeks, and even longer, having attained their full size in seven or eight days; but others suppurate very slowly, partially discharging a small quantity of thick matter, by which the hairs of the beard are matted together, so that shaving becomes impracticable, from the tender and irregular surface of the skin. This condition of the face, rendered rugged by tubercles, from both ears round to the point of the chin, together with partial ulceration and scabbing, and the matting together of the unshaven beard, occasions a considerable degree of deformity, and it is accompanied also by a troublesome itching." Of the *S. capilli** of the same author, affecting the upper part of the forehead, the temples, ears, etc., it may be said, briefly, that it does not differ very particularly from the affection formerly known as *porrigo favosa*.† The tubercles, which are softer and more acuminate than those of *S. menti*, rise in clusters approaching more or less nearly a circular form, and "pass into suppuration in the course of eight or ten days, becoming confluent, and producing an elevated unequal ulcerated surface, which often appears granulated, so as to afford some resemblance to the internal pulp of the fig."

It is the resemblance above mentioned, whether fancied or real, which is supposed to have originated the name of the disease.‡ This granulated appearance of the ulcerated surface was doubtless more common in ancient times, when many neglected cases of the dis-

* Otherwise, *S. capillitii*.

† See chapter entitled "Porrigo."

‡ Sycosis is thought to have been derived from the Greek σύκος.

ease were doubtless to be found ; modern instances must be looked for among the poorest and most wretched, if anywhere, for the stage at which the granulations appear need never be reached, with ordinary care and attention.

Even the supplementary titles which have been given the disease show the indefiniteness of the common ideas of syeosis. At one time it is termed *Acne mentagra* ; at another, *Herpes pustuleuse mentagre* ; *mentagra infantum* is defined* as *porrigo lupinosa*, or true porrigo ; and we find the names *Roseola flosa*, and "Bärber's Itch," also applied to syeosis,—the former being a species of aene, and the latter belonging to seabies, a vesicular disease, akin to eezema. And fieus, which is made synonymous with sycosis (but is probably a speeies of *molluscum*) is defined as a fleshy exereeseence, sometimes hard, sometimes soft, hanging by a stem or shaped like a fig, and oecurring almost anywhere,—even on the eyelids. One gives the disease a wide field, while another confines its operations strictly to the chin. Bateman classed it in Willan's order "Tuberulæ," but the French dermatologists transferred it, with aene, to the order "Pustulæ."† Wilson regards it as a disease of the sebiparous glands ; Plumbe, also, asserts that it is simply acne, oecurring to a region covered with hair :

* Dunglison's *Med. Dic.*

† Mr. Plumbe, whose "Practical Treatise on Diseases of the Skin" was published nearly thirty years ago, is the first writer who seems to have seen anything unphilosophical in the notion of Plenck, Willan, Bateman, Alibert, Rayer, and others, who based their systems of classification on the *manifestations* of diseases, rather than upon etiology, or their causes, constitutional and local. Mr. P. settled upon the latter view—which seems, in good part, to have originated with him,—and really supports his theory with force and cogency. Perhaps nothing but his unfortunate egotism, and habit of sneering at other writers, together with the well-known conservative tendencies of the profession, prevented his ideas becoming the basis of a new, perinanent, and generally-recognized system of classification for diseases of the skin.

the local irritation of the hair converting the eruption of acne into a number of minute abscesses.*

The recent discovery of a *parasitic vegetable production*, surrounding the roots of the hair, in several investigated cases of sycosis, has naturally modified the views of late writers in relation to the causes of the disease. Thus, Neligan, with others, is of the opinion that, although in one of its stages it may bear much resemblance to acne, in being more or less pustular, the pustules are the result of irritative inflammation, caused by the presence of the parasite. This theory is supported by names of considerable eminence. Though my judgment has not been particularly influenced by this theory, I propose to give an account of the discovery alluded to, with some observations on its possible agency in modifying the symptoms of the disease.

In 1842, a French microscopist, M. Gruby, announced to the French Academy of Sciences that he had ascertained the existence of a "cryptogamic plant," which, in sycosis or mentagra, surrounds the roots of the

* Doubtless this acute writer had really arrived at the cause of the peculiar phenomena which he observed; but it still, I think, remains a question whether the cases were those of true sycosis. The following passages are from his work, before alluded to:—"The part occupied by the beard is generally pretty well supplied with the sebaceous follicles, and these are of course equally liable to disorder with those in other parts of the skin from constitutional causes. When, however, any accidental circumstance brings on inflammation and disorder in them, the peculiarity of their situation abounds with impediments to its termination in the most desirable manner. The mouth of the inflamed follicle and the adjacent cutis is penetrated by hair, and the violence inflicted by frequent shaving makes every individual hair a powerful means of adding to the mischief. . . . From the local influence of the hair on the inflamed spot . . . a secretion of pus is formed around many of them, the hair being situated in its centre, and these pustules intermixed with the tubercles formed by the inflamed follicles, some of which are also showing matter on their apices, make up the external characters of the disease. The same phenomena are also observed when it occurs on the scalp," etc.

beard. As I construe his report, he does not make it an invariable characteristic of the disease, but confines it to a peculiar variety, previously undescribed, which he proposes to term *Mentagra contagiosum*. Rayer, a famous dermatologist, had previously declared that sycosis is not contagious. This new variety, however, was clearly deemed contagious by M. Gruby, who made the newly-discovered parasitic vegetable the agent of communication, by means of its *mycelia*. He also discovered it in porrigo* (which see), but in that disorder it appears above the surface of the integuments, whereas in sycosis or mentagra it is always beneath the surface. M. Gruby considers the parasitic plants in sycosis and porrigo to possess distinctive characters, giving data in support of the position; but Vogel, a microscopist of eminence, who is of one mind with M. Gruby in much else that relates to the parasites, believes them to be merely varieties of one species. It is proper to add, that many savans are disposed to deny the existence of parasitic plants altogether in these diseases. (See chapter on "Porrigo.")

Rayer defines syeosis, or mentagra,† as "a cutaneous inflammation characterized by the successive eruption

* A parasitic plant is reported to have been recently discovered also in pityriasis *versicolor*. Dr. Bennett observes that "although this disease frequently presents epiphytes among the scales, it owes none of its essential characters to this circumstance." It is also reported, by Dunglison, to occur in "*Herpes tonsurans*" and "*Plica Polonica*;" the former (see chapter entitled "Ringworm") is probably a porriginous disease, as well as some varieties of what has been called plica. A wide latitude has been given the latter term. The presence of a vegetable growth in this disease I think has not been demonstrated. Mr. Wilson asserts that though he has searched carefully for parasites in *P. versicolor*, he has failed to discover them.

† It is to be remembered that sycosis is not the only eruptive disease which may visit the chin, and that this region is subject to occasional attacks of acne and of various *eczematous* affections, which were formerly, when occurring there, all included under the general title of Sycosis.

of a number of small acuminate pustules, similar to those of *cuperosa*,* on the chin, submaxillary regions, and lateral parts of the face." Neligan intimates that these pustules are not an original symptom of sycosis. "The development of *mentagra*," pursues M. Rayer, "is usually preceded by a feeling of tension and heat on different points of the chin. The pustules, announced by slight smarting, are observed, at first, under the form of small red points, which gradually grow more prominent. Towards the second or third day of their formation, their summits become white, and enlarge, *but it is seldom they exceed a millet-seed in size.*" It will be remembered that the elevations of sycosis are by Dr. Bateman styled tubercles, and are described as "red and smooth, of a conoidal form, and nearly equal to a pea in magnitude." Many of these, also, "continue in this condition three or four weeks, and even longer," but others "*suppurate very slowly,*" etc. The pustules mentioned by Rayer, on the contrary, break spontaneously in from five to seven days; their walls shrivel; and a slight exudation produces a "*thin, slightly adherent crust.*" It is unnecessary to pursue the description further. It is evident that the *mentagra* or sycosis of M. Rayer at least, is nothing more than acne, "occurring," as Plumbe says, "on parts covered by hair." But when this affection, as described by him, has several times returned to the same region, as is often the case, the disease (like the face) finally wears a different complexion; and then we begin to observe symptoms which connect the disorder with the one described by Bateman, and more particularly with that of which Neligan has afforded a minute account, transcribed, in part, further on. "In most cases," observes Rayer, "*mentagra*, like *cuperosa*, is composed of several eruptions, succeeding

* *Acne rosacea*: see chapter entitled "Acne and kindred diseases."

one another at greater or less intervals. When pustules are developed several times on the same place, the inflammation penetrates the dermis and subcutaneous cellular tissue, producing indurations, which are not long before they assume the form of tubercles. These are seen particularly in persons of delicate constitution, in whom pustulous inflammation is never followed by complete resolution. When the eruptions are numerous, intense, and close together, the tubercles multiply and extend over the whole chin. New pustules form on the tubercles,* or in the interstices between them, and thus obscure the primary character of the disease. It is now that the confused mixture of tubercles, crusts, pustules, and scales, gives to mentagra its disgusting appearance. Arrived at this stage," he concludes, "it is always a serious disease, and difficult of cure." As I have before remarked, cutaneous diseases are not now suffered to arrive at such a desperate stage, except among the very ignorant poor, who have long neglected the eruption, or treated it injudiciously. I will now give the principal part of Dr. Neligan's description of sycosis:—

"This affection, the site of which is limited to that portion of the face on which the beard grows—the chin, the cheeks, and the upper lip, rarely extending to the integuments immediately adjacent—is developed at first by the appearance, around the roots of the hairs, of slightly inflamed-looking elevations, on which a dry, grayish scurf soon appears; this increases pretty quickly, and its presence exciting inflammation, which is much augmented by the use of the razor in shaving, conical pustules soon form, and mask much the original character of the disease. The eruption escaping notice in most cases in its early stage, has caused it to be described as

* A tubercle is a "small hard superficial tumor, circumscribed and permanent, or proceeding very slowly to suppuration."—*Willan*.

being pustular from the first; but careful observation has convinced me that the pustules are secondary and that they originate from the irritation caused by the vegetable parasite, which must therefore be regarded as the essential characteristic of this affection. The crust or scurf increases very slowly in extent, but, the attendant inflammation attacking the subcutaneous structures, is accompanied by much heat, pain, swelling, and tension, which are further augmented by the formation of the pustules; these pustules mature slowly, and when they at length burst, a dry, hard, brown scab forms, which is very persistent, and if its removal be attempted, the surface to which it adheres bleeds freely and is very painful." Should the attack prove to be but light, the crusts and scales presently fall off; the surface makes an approach to its original healthy appearance, presenting only a few reddish stains, upon the site of the eruption; but most usually the first attack is but the prelude to others far more formidable. The eruptions soon reappear, and this time spread more rapidly than at first, covering a much greater extent of surface, and manifesting far greater malignity. "After repeated outbreaks thus characterized," says our author, "the integuments of the chin become generally much hypertrophied,* of a dusky-red color, hard, and covered, in patches of a greater or less extent, with a thick, grayish crust pierced by the hair of the beard, with hard, dry, brown scabs, from beneath which pus exudes here and there, and with conical, elevated pustules, many of which, in consequence of their being developed over the site of a hair-follicle, are perforated by hairs. The inflammatory action, where sycosis presents these aggravated symptoms, is usually very severe; small abscesses sometimes form in the subcutaneous

* Thickened.

areolar tissue, and, engaging the hair-follicles, the beard falls out in patches, and permanent bald spots on the face result. Although the disease is in the majority of instances confined to that portion of the chin on which the beard grows, in very severe cases the upper lip and the surface covered by the whiskers are also engaged, and occasionally it is confined to these parts alone."

My own views of this disease may be briefly stated. I consider the sycosis of Bateman, the syerosis of Rayer, and the sycosis of Neligan, to be separate affections, though not distinct diseases. That of Dr. Bateman corresponds nearly to *aene indurata* as described in this work, the difference being attributable, when marked, to the presence of the beard in the former, or to the irritation produced in shaving. That of M. Rayer is sufficiently like *aene rosacea*, with the above restrictions, to be considered substantially the same. In neither of the above, I should say, has the vegetable parasite of Gruby been seen. The syerosis of Dr. Neligan may be likened to that of Bateman, modified by a serofulous habit and the presence of (so-called) cryptogamic vegetations, which are probably connected with that habit, and ally the disease with porrigo. I am, moreover, of the opinion that the question of the contagious nature of sycosis is not to be determined by one or two vague statements,* and is still open; that the

* Dr. Neligan cites but one example of the supposed transmission of the disease by means of the *mycelia* of the parasitic vegetable; it is "recorded by M. Foville, who witnessed the transmission of sycosis to several individuals by means of a razor which had been used in shaving a person affected with it." This, so far as I am aware, is absolutely the only instance; and until we can be satisfied that the disease was really sycosis, and that it was really produced in the way M. Foville mentions, I must confess that for my part I attach no particular importance to the statement. The disease may have been porrigo, or even scabies.

morbid growths may materially modify the action of the disease,—perhaps from their poisonous nature,—perhaps, merely as local irritants; that peculiar symptoms depend so greatly upon constitutional and local idiosyncrasies that it is hardly wise to make each of them a basis of a new disease;* and, finally, that, considering how greatly the accounts differ of those who have described sycosis, the acquiring a definite notion of the disease is an enterprise of no ordinary difficulty. With one or two reservations, I accept the definition of Neligan, as the one which offers the best chances of preserving its identity in a diagnosis.

If the author just alluded to be not disingenuous, he has at least permitted his prejudices to warp his judgment, and this on more than one occasion. So anxious is he to render his diagnosis of sycosis absolute, that he apparently attempts to blind the student to the fact of the follicles being primarily concerned; for, although he is forced to state, in the beginning, that the inflamed elevations first appear “around the roots of the hairs”—a strong hint of the origin of the disorder—he afterward, in speaking of certain conical, elevated pustules, which constitute one of the later symptoms, observes

* “I am of the opinion,” says Mr. Plumbe, “that the variation of *form* of cutaneous disease is produced by the derangement, more or less, of certain portions of the cutaneous apparatus. Now the application of stimulants and caustics deranges all these, and therefore generally lessens our chances of success, because, although we may be acting beneficially on one, we are probably exciting and disordering another. Unless, indeed, we make up our minds to destroy the original structure entirely, and draw largely on the powers of nature to replace it by new, stimulants and caustics are rarely justifiable, and even then comes again with redoubled force the consideration of those powers, or in other words, of the general health. Is the latter manifestly such as to justify a destruction of a part of the surface, the seat of long-standing disease, with the expectation mentioned? I believe this question will seldom admit of being answered in the affirmative.”

that many of them, “*in consequence of their being developed over the site of a hair-follicle*, are perforated by hairs.” If the hairs are no way concerned, except incidentally, why is the disease peculiar to *men*? In his therapeutical directions, he observes that “as regards the local treatment, the *first* indication is to counteract, as far as possible, the irritation caused by the *growth* of the beard,” etc. Why “*growth?*” Why not *presence* of the beard? Because (as I fancy) a previous author, of whom he is foolishly jealous (Mr. Plumbe), has in various places laid particular stress on the injurious effects of the hairs, in certain affections, acting as local irritants; and, further, because he has elsewhere (see his chapter on “*Porrigo*”) sneered at the old practice of removing the hairs, in similar cases, and misrepresented the theory on which the earlier physicians proceeded. “As a remedial measure,” he says, “it originated in the false idea that the disease was an affection of the *hairs* solely,” etc., when it is perfectly plain that they considered the disease as merely *aggravated* and *prolonged* by the irritation of the hairs. How far their practice was justified by results, may be learned by reference to the chapter entitled “*Porrigo*,” in the present work. Besides, it may be asked, is there no significance in the fact, as stated by him in his account of sycosis, that the “*cryptogamic plants*” are found “surrounding the roots of the hair of the beard?” It is not said that they are found in any other situation. He constitutes the presence of the plants the chief distinguishing symptom of sycosis; and yet the pustules are perforated by hairs, because “many” of them chance to be “developed over the site of a hair-follicle!”

I would not be thought hypercritical, in the foregoing strictures, which may strike the reader as having been made in rather too illiberal a spirit; but I am searching for the truth, and am apt to handle somewhat irrever-

ently that which seems to stand in its way or run counter to its course. I am impatient with everything, in a work of science, that is apparently foreign from the principles which should govern it; and a want of frankness, in such an undertaking, I hold to be unpardonable.

TREATMENT.

Sycosis is a very obstinate disease, being prone to return though seemingly banished the system, and generally recurring with added strength and malignity. Though the general health is apparently uninfluenced by it, yet its repulsive appearance, and the suffering it occasions, both of mind and body, endow it with no ordinary terrors. It is thought, by some writers, to be well-nigh incurable when it has assumed the chronic form; and the number of cases which have for years resisted every plan of treatment, and the disfigured countenances of some who have been cured at last, go far to support their views. Among those of an opposite opinion is Mr. Plumbe, who declares that "the simplest application of the first principles of surgery is fully adequate" to its removal. He here refers to the earlier stages of the disease; and declares that with proper treatment it does not assume a character of obstinacy, "except in scrofulous constitutions."

Although, as mentioned above, it cannot be proved that the action of sycosis is unfavorable to the general health, it is undeniable that the system of those afflicted with this disease is usually more or less deranged. How far this derangement is chargeable with the existence of the disease, cannot be satisfactorily decided; but the fact of their co-existence may justly be regarded as possessing considerable significance.

It may be observed, in a general way, of this and other affections, that the indiscriminate use of any single

preparation, of the nature of a specific for skin diseases, may be attended with considerable danger. Even the warm bath, that universal remedial adjunct, so generally supposed to be quite harmless, if not in all cases beneficial, cannot always be employed with impunity. And if this may be truly said of so mild a curative agent, how much more strongly may it apply to the numerous nostrums so freely offered, which almost always contain some powerful ingredient, caustic or astringent, capable of inflicting serious and irreparable injury on the delicate texture to which it may be applied. (See note on page 364.)

True sycosis is in this country a rare affection,—even though we include under that title those other diseases which usually pass for sycosis. The general treatment of modern practitioners embraces attention to the bodily health, with the use of tonics, etc., to which are added, in long-standing cases, or in those which are accompanied by weakness and want of tone, preparations of iodine, vegetable tonics, diaphoretics, etc. Mr. Plumbe's topical treatment consists, in part, in using the lancet to those tubercles which have no hairs growing through them, and in other cases plucking out the hairs, if practicable, and gently pressing out the contained matter. This, he says, will be followed by a rapid subsidence of the inflammation. Dr. Neligan cuts the hair of the beard as close as possible with sharp scissors, applies leeches behind the ears "once or twice a week during the inflammatory stages of the disease," except when it is chronic or has been of long duration, and recommends the application of the following cerate, three times daily:—

R. Calomelanos.....	3ss.
Cerati Galeni.....	3j.
Chloroformi.....	m. xij. Misce.

He observes that "in very obstinate cases, or those which resist the use of this combination, the iodide of lead ointment [for formula see elsewhere], . . . with the addition of the quantity of chloroform above prescribed, will be found of much service." Previously to the use of the ointment or cerate, the diseased surface is well sponged with equal parts of new milk and a weak alkaline or lead wash.

In brief, my course of treatment for sycosis is as follows:—In those varieties (Bateman's and Rayer's) which are akin to acne, let the lotion I have recommended for acne be used in the earlier stages; when the integument is thickened and grown indurated, the tincture of wild indigo root, as recommended for debilitation of the cuticle, is of essential service. In true sycosis, the treatment for porrigo, where the symptoms coincide with those of that disease, will be found efficient. Where much irritation and pruritus exist, the following preparation may be used with decided benefit:

Sulphate of zinc.....	3j.
Corrosive sublimate.....	gr. v.
Glycerine (Price's).....	3j.
Soft or distilled water.....	3xij.

Apply three or four times in the day.

CHAPTER XXV.

Ephelis; Maculae hepaticæ; Moth-patch; etc.

As the treatment of the cutaneous discolorations termed *Chloasma*, or "Moth-patches," has long been a specialty of my practice, and in view of my purpose to include in my work a reference to most of the diseases

which especially affect the face, I have deemed it proper to afford the reader some account of this disorder, and to assist him in discriminating among several affections which by other writers are confounded with one another, and therefore wrongly named.

Wilson's third group, of the order "Maeulæ" ("spots" or "stains"), termed "Morbid Alteration of Pigment," includes four affections, viz.: Ephelis, Lentigo, Chloasma, and Melasma. The first (from ἡπιτ, ἥλιος, the sun) is commonly known as "sun-burn;" the second, as "freckles;" while the third, though corresponding in title with the disorder which I shall soon describe, differs from it in several important particulars. Wilson gives *Pityriasis versicolor* as one of the synonyms of Chloasma: and indeed the title is not far-fetched, judging from his description. Though the spots are "frequently developed without accompanying symptoms," he adds that "at other times they are attended with considerable itching, which continues through their course, and gives rise to great annoyance; for the more the parts are scratched, the greater the itching becomes. The pruritus is greatly increased by mental emotion, by impending catamenia, by stimulating food or drink, and by the warmth of the bed, and is often exasperated at the latter period to such a degree as to deprive the sufferer of sleep. When the disease subsides, desquamation of the epiderma [epidermis] ensues, and is repeated several times after the total decline of the symptoms." The foregoing description is not affected materially by the qualification that it applies to chloasma "when recent and in the active state," or that "when chronic it gives rise to very little inconvenience." Most of the symptoms detailed characterize the mild form of psoriasis termed *pityriasis*, and manifestly connect the chloasma of Wilson strongly with the latter disease. (See chapter on "Lepra and Psoriasis.") The favorite loca-

tions of the affection (in women, "on the front of the chest, on the abdomen, and pit of the stomach;" in men, on the abdomen, arm-pits, back of the neck, etc.) are those also of pityriasis *diffusa*, as described by Neligan. The connection of the disorder with the leprosous affections is further strengthened by the additional statement that "on examination with a lens, there is a *conspicuous alteration and elevation of the skin*, and a mealy and pulverent desquamation."

Dr. Neligan, observing that, though the term *Ephelis* "was originally employed to designate all discolorations of the skin caused by the direct action of the solar rays," it has "acquired a more extended signification," bestows it upon "all those affections in which the natural pigment hue of the skin is augmented or altered." This I regard as an unfortunate change. The origin of the term scarcely warrants it, and Wilson's nomenclature commends itself far more strongly to my respect, although, as the reader has seen, I cannot wholly subscribe to his definitions. The term "Chloasma" (from $\chi\lambdaooς$, "a greenish-yellow color"), since—with a trifling modification—it well enough expresses the appearance of the affection, and does not restrain the fancy to one particular *cause*, out of the many which probably may occasion it, I consider to be far preferable, in connection with the disorder under consideration. I shall soon have occasion to dissent also from this author's *description* of the disease, though not so emphatically as from portions of Wilson's account.

Neligan has *Ephelis lenticularis*, *E. hepatica*, and *E. violacea*, the last corresponding with Wilson's proposed fourth group of the order Maculæ. *E. lenticularis* is Wilson's "Lentigo," above mentioned. *E. hepatica*, the disorder which engages our attention, "is characterized," says Dr. N., "by the appearance of one or more patches, of tolerable extent, on some portion of

the cutaneous surface; they are of a dull yellow or buff color, occasionally of a bronze hue; at first distinct from each other; when more than one occurs, they gradually enlarge, and coalescing often acquire a considerable size, so that in some cases the neck, the face, the upper part of the trunk and the hands, being the parts usually affected, acquire a dark brown color. On the first appearance of the patches they are not unfrequently attended with some itching and tingling, and a fine mealy desquamation, increased by scratching or rubbing the surface, takes place; but there is no sensible elevation or depression of the skin where affected. The coloration varies much in different cases, through all the shades of gray, yellow, and brown, being often evidently dependent on the natural color of the individual; at times, when it is very extensive, the contrast is so remarkable that the unaffected parts of the skin appear as if they were the seat of vitiligo."

The Chloasma which I treat, and which is by no means a rare affection, differs from the *E. hepatica* of Dr. Neligan in several particulars. It appears almost exclusively on the forehead and side of the face, now and then also on the neck, the size and color of the spots being very like those in the above description (the patches also frequently coalescing as there mentioned), but it is never attended with pruritus or with desquamation or exfoliation, and the change in color is the only mark of difference between the affected and the contiguous portions of the skin. It is different from sun-burn, and, though I have repeatedly examined the affected spots with a lens, I have never observed the elevation mentioned by Wilson. This, however, might be expected, since it is apparent, from his account of chloasma, that it is a materially different disorder from the one I have here defined. The question, therefore, whether the chloasma of Wilson, and the ephelis he-

patica of Neligan, shall be regarded as belonging to the "Maculæ" or to the "Squamæ," may still be a vexed one: *our* chloasma is evidently associated with the former.

After the foregoing, it is needless to comment on the various theories having for their object the elucidation of the question of the origin, nature, and relationship of chloasma, since they one and all refer to something else.*

Chloasma, in my experience, is not more frequent in women than in men, and though it is chiefly incident to those of mature years, may occur at any age; and while those who possess a delicate and susceptible skin are perhaps its special subjects, I have known many cases occurring to a dark, coarse, strong, healthy cuticle, and indeed can hardly avoid the opinion that its attacks depend not so much on the age, sex, complexion, texture of the skin, or general physical condition of the subject, as upon a certain morbid state of the organs whose office it is to secrete the cuticle, the ultimate cause or causes being unknown, and that this state favors, under circumstances which increase the usual supply of pigment matter in the system, the inordinate introduction of pigment granules into the color-cells of the *rete mucosum* or younger portion of the epidermis—where, as has been shown, the coloring principle of the skin is chiefly to be found.

When the coloring matter has reached the locality in question, it can be removed only by topical applications: the most fortunate internal remedy could merely arrest the supply of pigment, and thus prevent the spreading of the discoloration, or the increase of the number of ephelides or spots. As no constitutional

* See a note to the chapter on "Sycosis," for mention of a parasitic plant said to have been discovered in pityriasis *versicolor*.

symptoms accompany chloasma (though they are doubtless often observable in pityriasis *versicolor*) it is useless to note the remedies prescribed for internal use in the latter disease. Of course, should a state of general debility exist, it must be removed by appropriate remedies, as the arrest of chloasma may thus be rendered more speedy. Wilson's topical treatment for the disease described by him under the above title, is of course inapplicable here; but his method for lentigo or freckles is worthy of notice in this connection, since the latter disease and true chloasma are extremely similar, and are to be treated in precisely the same way. "The treatment of lentigo," says Wilson, "consists in the application of some moderately stimulating therapeutic agent, which may excite the skin to a more healthy function. The lotion of bitter almonds containing five grains of the bichloride of mercury to the half pint is well adapted for this purpose; or a weak solution of citric acid in infusion of roses. I have seen the liniment of lime-water and oil, with a small quantity of liquor ammoniæ, also of use in this unsightly affection."

Dr. Neligan observes that the local applications which prove most serviceable in *E. hepatica* are those which he has recommended for *E. lenticularis*; "when, however, the discoloration of the surface is very extensive," he adds, "hot baths, containing the sulphuret of potassium, or of the natural sulphureous waters, will be found of service. . . When a single large patch of ephelis hepatica becomes chronic, repeated blisters applied over it will sometimes remove the discoloration of the part."—I have found sulphur, in whatever form, of little use in chloasma; and would not recommend it. The treatment of this author for *E. lenticularis* (freckles) is contained in the following passages:—

"I have found the following lotion of much service:—

R. Liquoris Soda Chlorinatae.....	fl 3ij.
Aqua Florum Sambuci.....	fl 3vij.
Aqua Lauro-Cerasi.....	fl 3vj. Misce.

And the application at night of a pomade, consisting of equal parts of cold cream and cucumber cerate, to every ounce of which half a drachm of the solution of chlorinated soda is added. . . The various empirical lotions which are sold for the removal of these spots, are composed chiefly of corrosive sublimate, or of the solution of the subacetate of lead in bitter almond emulsion, in the proportion of a fourth of a grain of the former, or six minims of the latter, to each ounce of either of them; they are often very useful."—He also recommends that those who are liable to the affection should protect themselves as much as possible from the causes which induce it.

The cucumber cerate, above mentioned (for formula see "Therapeutics"), is a useful application, in this and various other disorders of the skin: it is particularly serviceable, however, where the parts are inflamed and irritable,—as in various eczematous and porriginous affections.

APPENDIX.

POPULAR COSMETICS FOR THE HAIR.

Their Composition and Effects.

KNOWING the persuasive power of *facts*, when used to sustain a position, I have thought that I could materially enhance the gravity of the caution I have elsewhere advanced, against the use of various preparations, advertised to reproduce, or strengthen, or beautify, or eradicate the hair, by exposing the composition of these nostrums, and pointing out plainly the probable or inevitable results of employing them. Although it is unquestionable that some of them have now and then seemed to act favorably, and in other instances have apparently done no harm, it is still a sad truth that in the vast majority of cases they not only are useless but positively injurious. When we reflect on the numbers of persons engaged in their manufacture, and the almost infinite variety of the compounds themselves, it is apparent that the business is very profitable, since it is only success which inspires competition. To be thus profitable, these wares must be produced from very cheap materials : a conclusion which the reader will soon perceive is well founded. The truth is, that under the guise of variety, and the pretense of many grades of quality, they are very much alike, and about equally efficient. They are put up, most usually, by ignorant and unscrupulous speculators, whose chief aim is to make money. With the lying advertisements of these gentry, all are familiar. The endorsements of respectable chemists, druggists, etc., certainly cannot change the character of the preparations. Were this the case, and did all the medicinal compounds vended by druggists really possess the virtues so liberally ascribed to them, the American people would be the healthiest in the world,—for in no other are the quacks so eloquent. Deaths, except from old age or accident, would

scarcely be known. Instead of this, as every one can testify, we are the most sickly, bed-ridden, dyspeptical, delicate, unsound people to be found. And at least one-half of our physical troubles are directly traceable to the enormous consumption of "infallible" nostrums that is constantly going forward, from Maine to California.—The credulity and infatuation so useful to the speculator in patent medicines, are equally serviceable to the maker of cosmetics for the skin and the hair. We are here so sensitive to general opinion, so vain and selfish, that much of our time is spent in schemes for the beautifying of the person ; and every knowing rascal who offers to advance our ends is heard with eagerness and unhesitatingly patronized. Hence the fearful deluge of oil, and the avalanche of grease and powder, that for so many years have descended on our heads, and still are falling. Is it strange that there are to be found among us so very few heads of fine hair, or so rare instances of a really good complexion ?

The use of these myriad nostrums has always been based on the absurd idea that nature, assumed to be incapable of attaining her own ends, must be aided artificially, particularly where the end is beauty or fitness. Another very mischievous notion has also generally obtained, viz. : that every unfavorable aspect of the skin or the hair is a mark of disease, or is irremediable through the spontaneous efforts of nature, and must needs, therefore, be obviated in the way suggested by the nearest charlatan. A long and pompous essay, meaning absolutely nothing, is generally capable of convincing the foolish ; and the moment they are convinced, they buy the article so solemnly commended, the essayist cheerfully pocketing the money and laughing gently in his sleeve at the simpleton whom he has so fatally charmed with his eloquence.

Hardly a substance one could name but has been employed, at one time or another, as a cosmetic, either for the hair or the skin. Witness the following authentic list of articles which, with many others, have been used to promote the growth of the hair :—

Animal substances :—Fat of the bear, deer, hedgehog, rabbit, man, mole, goose, snake ; ashes of the hedgehog, hedgehog skin, mouse, goat's hair, horse's teeth, bees, wasps ; Spanish flies, house-flies distilled with honey in milk, honey, bee-glue, red coral.

Vegetable substances :—Resins : aloes, amber, benzoin, euphorbium, frankincense, laudanum, mastich, myrrh, pine rosin, balsam of Peru, cedar-tar, common tar, turpentine ; Oils : oil of bays, chamomile, dill,

paper, southernwood, spikenard ; Roots : cyclamen, hellebore, lily (white), onion, orris, reed, squill, sweetflag, verbascum ; Seeds : almonds (bitter), beans (flour), colocynth, fennel (wild), mustard, nasturtium, nutmeg (burnt), rockett, stavesacre ; Other parts of plants : agallochum, althea, asarabacca, chamomile flowers, cinchona (bark), cresses, cyperus, dock, fœnugreck, fig-leaves, house-leek, lavender (stæchas), maidenhair, malva, melilotus, myrtle-leaves, parietaria, pomegranate bark and flowers, poplar-buds, reeds, bark and leaves burnt, rose-leaves, red rose, rosemary, salvia, St. John's-wort, thapsia, verbascum, wormwood.

Honey-water, and burnt linen cloth, have also been trained into the service ; and sulphur, that useful mineral, has contributed its valuable properties to the same end.

It might be thought difficult to fix on any property common to these ninety articles. But it would be necessary to do so, since in default of this, the use of many would be sufficiently absurd, even while granting the efficiency of others. The most of them, however, it will be observed, are stimulants ; and we shall find that it is really on the stimulating property in these various substances that the user has generally depended for benefit to the hair. Even the fats—though expected to *nourish* the hair—have acted only in this manner. The notions which have been more or less widely prevalent, on this subject, have some of them been very whimsical and absurd. Thus, on the principle of “like going to and nourishing like,” the fat of excessively hairy animals—as, for instance, the bear—has been considered peculiarly precious as a promoter of the growth of the human hair ; while that of the hedgehog, on a similar principle, would tend to make the hair strong ! The fat from a human scalp—a well-thatched one being probably preferred—was formerly regarded with feelings of peculiar interest, by these ingenious philosophers, whose surprise, on putting their theory to the test, must have been great, upon finding that after all it was no richer in virtue than any other kind of grease. A kindred notion was that which fixed on *ravens' eggs* as a proper application for coloring the hair black. The Romans were not behind us in the oddity of their fancies, for they resorted not only to external but to internal remedies for loss of hair. Pliny mentions one of the latter kind, observing that “the sponge growing out of the wild rose, reduced to ashes and mixed with honey, is one of the noblest remedies.”

The use of the various oleaginous substances mentioned above was preceded by operations of cleansing and friction,—to which we may attribute, in most cases, the benefit which the hair may have derived from the treatment in question. I have elsewhere shown that the continued application of fatty matter, in any appreciable quantity, to the scalp, must necessarily operate injuriously. That bathing and friction may result more favorably I have demonstrated in the same place. There is an elderly female in London, of some repute in the practice of restoring hair, whose method is said to consist mainly in getting the head of her subject between her knees, and straightway beginning a most vigorous attack upon it, consisting in rubbing, pinching, pummelling, shampooing, and the like, which results in the effectual stimulation of every part. Another aged sister produces a similar result with blistering-powder.

It will have been observed that these violently stimulative operations generally fail completely, and their best success is usually to produce a feeble growth of short, downy hairs, which disappear after a time, or remain but to tantalize with a perpetual promise never fulfilled. This shows that stimulation is often unphilosophic, and even when it may be of use it must often be coupled with other appliances in order to be of permanent good effect.

Without employing further time with these observations, I will now fulfil the promise made at the outset, and give the composition of a large number of preparations, more or less famous, which have been employed—and many of them are still in use—to reproduce, or strengthen, or beautify, or transform, or eradicate the hair. I shall begin with certain compounds which are well known to the public, since they have been largely advertised, and, doubtless, largely purchased. I shall not be so severe upon the proprietors as to give the names of these articles, though I had at first thought of doing so; but I assure the reader that the composition of a number of the most prominent “Restoratives” in use is here faithfully given:—

No. 1.—To 8 oz. of 90 per cent. alcohol, colored with a few drops of tincture of alkanet root, add 1 oz. of castor oil, and perfume with a compound of bergamot, narinie, verbena, and orange.

The above is the wonderful specific of a prominent Broadway perfumer. How elegant! how elaborate!—

No. 2.—To 8 oz. of 90 or 95 per cent. alcohol, colored red with alkanet, add 1 oz. of castor oil; perfume with geranium and verbena.

No. 3.—To 8 oz. of 80 per cent. alcohol, colored yellow with a few drops of the extract of annatto, add 2 oz. of castor oil, and perfume with a little bergamot.

No. 4.—To 8 oz. of 80 per cent. alcohol, add 2 oz. of castor oil, without any perfume whatever.

No. 5—is made in the same manner, with the addition of a little perfume.

Certain “Pomades” have long been in repute for restoring the hair. I give the composition of several :—

Dupuytren's Pomade.—The recipe given by Bateman and Rennie for this celebrated cosmetic,—viz.: Almond oil, lard, suet, and essential oils,—is remarkable for entirely omitting the active ingredient. It is probable that the preparation first employed by M. Dupuytren was more simple in its form than that which he subsequently adopted; but *cantharides* was always the essential constituent. The first formula was:—Tincture of cantharides (made according to the Paris Codex, 1 part of flies to 8 of proof spirit); lard, 9 parts. The following are said more nearly to represent the compound in its improved and more elegant form:—M. Cap prescribes,—Beef marrow, 2 oz.; spirituous extract of cantharides (made by evaporating the above tincture), 8 gr.; rose oil, 1 dr.; essence of lemon, 50 drops. M. Fontaine directs,—Beef marrow, 4 oz.; calomel, 2½ dr.; extract of cantharides, 18 dr.; otto of roses, 2 drops. But the following, by M. Recluz, is said to have been acknowledged by Dupuytren as the true formula:—Beef marrow, 6 oz.; nervine balsam, 2 oz.; Peruvian balsam, 2 oz.; oil of almonds, 1½ oz.; extract of cantharides, 16 gr.; melt the marrow and nervine balsam with the oil, strain; add the balsam of Peru, and lastly the extract, dissolved in a drachm of rectified spirit. M. Guibourt says that no better than the following can be used:—Beef marrow, 1 oz.; nervine balsam, 1 oz.; rose oil, 1 dr.; extract of cantharides (dissolved in spirit), 6 gr.

The above are directed to be rubbed on the scalp once or twice a day for several weeks. Should soreness result, the applications should be less frequent.

Pommade contre l'alopecie.—Best lemon juice, 1 dr.; extract of bark (by cold water), 2 dr.; marrow, 2 oz.; tincture of cantharides (as above), 1 dr.; oil of cedar, 20 drops; oil of bergamot, 10 drops; mix. First wash the head with soap and water, then with a little eau de Cologne; then rub it dry. Next morning rub in a small lump of pomade, and repeat this process daily. This is claimed to cure baldness in four or five weeks.

These pomades are enjoined to be used for several weeks, in order to produce a decided effect, either in curing or preventing baldness. Those which contain cantharides in any form are the most active, and must be used with caution. They should be applied once or twice in a day, according to the effect produced; but if the scalp become sore, their use must be omitted for a time, or longer intervals allowed, as the case may require. When employed to prevent the hair from falling off or becoming gray, they need not be applied so frequently as for baldness.

It is probable that these pomades produce more marked results than the restoratives previously described, in consequence of the cantharides they contain, which is a powerful stimulant. The restoratives, lustrals, and the like, are almost uniformly composed of castor

oil and alcohol, since no other fixed oil but this will dissolve in alcohol, except very sparingly.*

Pomatums and Pomades.

Though I do not favor the use of any of the compounds coming under the above head, I am aware that many will employ them, in spite of advice, and, therefore, it may oblige some of my readers if I tell them how some of the very best are made. They are usually composed of animal fats, variously perfumed. The lard, veal fat, beef or mutton suet, bears' fat, or beef marrow, employed for this purpose, requires to be prepared with great care. The following is perhaps the best mode:—Cut the raw fat into pieces, carefully removing the fleshy and bloody portions of membrane, etc., and beat it in a marble mortar; melt it in a well-tinned vessel placed in boiling water, and strain the melted fat through a hair-sieve without pressure: reserving the residue to be heated again and pressed for more fat, to be used for commoner purposes. Keep the melted fat for some time gently warm, without disturbing it; remove any scum which may have arisen, and pour off the clear fat, taking care that none of the dregs or watery liquid passes with it. A mixture of these fats forms the basis of many varieties of pomades. Sometimes a little white wax is added. A greater degree of whiteness is said to be given, by adding to the liquefied fat a few grains of citric acid. The same end is promoted by assiduously beating the pomade while cooling, with a wooden spatula.

To perfume pomatums, various essential oils, etc., are added; but the finer sorts are perfumed by infusing fresh flowers in the melted

* Onions, rubbed frequently on the parts from which the hair has fallen, have been considered efficacious in restoring the hair. The stimulating powers of this vegetable may in numerous instances be of service in restoring the tone of the skin, and assisting the capillary vessels in sending forth new hair; but the remedy is not infallible. Should it succeed, however, the growth of the new hairs may be assisted by the oil of myrtleberries, the repute of which, perhaps, is greater than its real efficacy. These applications are cheap and harmless, though they may do no good: a character which cannot be ascribed to the numerous quack remedies of the day.

Another remedy for baldness, of considerable repute, is the decoction of box, which is thus made:—Take of the common box, which grows in garden borders (stems and leaves), four large handfuls; boil in three pints of water, in a closely-covered vessel, for a quarter of an hour, and let the liquid stand in a covered earthenware jar for ten hours or more; strain, and add an ounce and a half of eau de Cologne, or lavender water, to preserve it. The head should be well washed with this solution every morning.

fats for some hours, and straining; or, in other cases, the simple pomade is thinly spread on plates of glass set in frames, and the fresh flower stuck in the scored surface of the fat; changing the flowers daily till the pomatum is sufficiently impregnated.

Common Pomatum.—Mutton suet,* 1 lb.; prepared lard, 3 lbs.: melt these in a water-bath, pour the mixture into an earthen basin, and beat it assiduously with a wooden spatula. When it is somewhat cool, add 2 oz. of essence of bergamot, or of lemon, and continue the stirring till the pomatum is nearly cold.

Pomade.—Oil of sweet almonds, 1 pint; spermaeeti, 1½ oz.; purified lard, 2 oz.: melt these with a gentle heat; when the mixture is nearly cold add any agreeable scent, and pour it into pots or wide-mouthed bottles.

Rose.—Prepared lard, 16 oz.; prepared suet, 2 oz.; melt these with a gentle heat, and add 2 oz. of rose-water, and 6 drops of otto of roses. Beat them well together, and pour the mixture into pots before it is too cold. For making jessamine, violet, and orange pomade, use the same quantity of water, and 1 dr. of the essence.

Marrow.—Beef marrow and beef suet, colored with a little annatto, may be employed for this and other yellow pomatums.

German Pomade.—Melt 8 oz. of purified marrow in a glass or stone-ware vessel, and add 1½ oz. of fresh bay leaves; 1 oz. of orange leaves; 1 oz. of bitter almonds; ½ oz. nutmegs; ¼ oz. of cloves; and 1 dr. of vanilla; all bruised; cover the vessel, and let the whole digest for 24 hours, with a gentle heat; strain the mixture while warm through linen, and stir it as it cools.

Castor Oil Pomade.—Castor oil, 4 oz.; prepared lard, 2 oz.; white wax, 6 dr.; essence of bergamot, 2 dr.; oil of lavender, 20 drops; eau de Cologne, ½ dr.: stir the mixture till it is cold.

Crystalline Castor Oil Pomade.—Castor oil 16 oz.; spermaeeti, 1½ oz.; melt these together, and when the mixture is a little cool add 1 oz. of essence of bergamot, ½ dr. oil of verbena, ¼ dr. oil of lavender; pour it into wide-mouthed bottles, and let it stand till cold.

Fox Cream.—Marrow pomatum, 2 oz.; oil of almonds, 2 oz.; melt these, and add, while they are cooling, with constant stirring, essence of jessamine or of bergamot, 2 dr.

Circassian Cream.—Two flasks of oil; 3 oz. of white wax: 2 oz. of spermaceti; ½ oz. of alkanet-root. Digest the oil with the alkanet till it is colored; strain; melt the wax and spermaeeti with the oil, and when they are sufficiently cool add 2½ dr. of English oil of lavender, and ¼ dr. of essence of ambergris.

Crystalline Cream.—Oil of almonds, 8 oz.; spermaeeti 1 oz.; melt these together; when the mixture is a little cooled add ½ oz. or less of essence of bergamot, or other perfume; put the cream into wide-mouthed bottles, and let it stand till cold.

Camphorated Crystalline Cream may be made by using camphorated oil (*Lin. Camphoræ*) instead of oil of almonds.

Black Pomatum.—In sticks, for the eyebrows, whiskers, etc. Prepared lard, melted with a third of its weight of wax in winter, or half in summer, colored with levigated ivory black, and strained through any material which will permit the fine particles of ivory black to pass through. Stir it constantly, and when it begins to thicken pour it into paper moulds.

* Prepared as above directed.

Brown and Chestnut.—Is prepared in the same way, but colored with umber, etc.

Ebony Pomatum.—Melt 4 oz. of white wax with 12 oz. of any kind of pomatum, and add 2 oz. of powdered ivory black. Proceed as above, and pour the pomatum into pots.

Hard or Roll Pomatum. No. 1.—Suet, 5 lbs.; white wax, 8 oz.; spermaceti, 2 oz.; oil of lavender and essence of ambergris, each $\frac{1}{2}$ ounce.

No. 2.—Beef suet, 16 oz.; white or yellow wax, 1 oz.; with 1 dr. of oil of lavender or bergamot.

No 3.—Lard, melted with one-third or half its weight of white wax, and poured, when nearly set, into semi-cylindrical paper moulds. This is sold under the name of *cosmetique*. It is sometimes colored to match the hair.

Colored.—The coloring matters employed are annatto, alkanet, marigold, carmine, indigo, cobalt blue, umber, ivory-black, etc.

Bears' Grease. [Artificial.]—Bears' grease is imitated by a mixture of prepared veal suet and beef-marrow. It may be scented at pleasure; oil of lavender with a very little oil of thyme is sometimes used. The following are some of the compounds sold under this name:—

No. 1.—Prepared suet, 3 oz.; lard, 1 oz.; olive oil, 1 oz.; oil of cloves, 10 drops; compound tincture of benzoin, 1 dr.; mix.

No. 2.—Lard, 1 lb.; solution of carbonate of potash, 2 oz.

No. 3.—Olive oil, 4 flasks; white wax, 4 oz.; spermaceti, 2 oz.; scented with otto of roses and oil of bitter almonds.

Green Bears' Grease.—Bears' grease, digested with fresh walnut leaves, and strained. This is repeated with more leaves till the pomade is sufficiently colored; it is then scented with oil of rosemary, thyme, and bergamot.

Oils.

The basis of these oils is either almond oil, olive oil, or oil of ben; that which is used should be perfectly fresh, and of the finest quality. The perfume is communicated in three ways: by infusing the flowers in the oil by a gentle heat; by placing layers of flowers alternately with folded cotton soaked in the oil, in proper frames, and pressing out the oil when sufficiently imbued with the odor of the flowers; or simply by adding essential oils, etc., to the fixed oil. An example or two of each method will be sufficient:—

Oil of Roses, by Infusion.—Heat in a water-bath 1 lb. of olive oil, and add 1 lb. of fresh picked petals of Provence roses. Let these remain together in the water-bath for half an hour; remove them from the bath, and leave them together for 24 hours, stirring them twice during the time. Strain the mixture through a cloth, and express all the oil. To this oil add fresh roses, and proceed as before; repeating this for five, six, or seven times, till the oil is sufficiently perfumed.

Oil of Jessamine, Perfumed with the Flowers.—Fold pieces of white cotton cloth twice or four times; moisten them with fine olive oil, slightly pressing them, and lay them in proper frames. Then place on the cloths a rather thick layer of fresh-gathered and dry jessamine flowers, carefully deprived of all green parts. In 24 hours carefully

remove the flowers, and replace them by fresh ones, till the oil is sufficiently perfumed. The oil is then expressed. The same method is employed in preparing oils from other delicate flowers; as the violet, lily of the valley, etc.

Oil of Roses, Common.—Fine olive or almond oil, a pint; otto of roses, 16 drops. If required red, color the oil with alkanet root, and strain before adding the otto. For common use, essence of bergamot or of lemon is often substituted, wholly or in part, for the more expensive otto.

Oil of Bergamot, etc..—To oil of ben, or finest almond or olive oil, add essential oil of bergamot, lemon, etc. For common purposes a drachm of the essential oil may be added to 16 oz. of oil. Some recipes, however, direct as much as 1½ oz. or 2 oz.

Oil of Ambergris and Musk.—Ambergris 2 dr., musk ½ dr.; grind them together in a mortar, then with a small quantity of oil; add more oil to make up a pint, and let them stand together for 12 days, stirring them occasionally. Then decant or filter. Add half a pint of oil to the residue for an oil of second quality.

Common Oil of Musk and Oil of Benzoin.—May be obtained by mixing a strong tincture of these drugs with fine oil, agitating them frequently together, and, after they have stood several hours at rest, decanting the clear oil.

Macassar Oil.—The oil made by the natives in the island is obtained by boiling the kernel of the fruit of a tree resembling the walnut, called in Malay, *badeau*. The oil is mixed with other ingredients, and has a smell approaching to that of crocose. But the Macassar oil sold in this country has probably no relation to the above, except in name. The following is given by Gray:—Olive oil, 1 lb.; oil of origanum, 1 dr. The following French compound is probably named Macassar oil rather to denote its properties than from any resemblance either to the product of Macassar, or to the oil sold under this name in England:—

Huile de Macassar, de Naquet.—Oil of beans, 14 pints; nut oil, 7 pints; spirit of wine, 1 quart; essence of bergamot, 3 oz.; tincture of musk, 3 oz.; spirit of orange (*esprit de Portugal*), 2 oz.; otto of roses, 2 dr.; alkanet to color it. Digest these together with a gentle heat for an hour, and shake frequently for a week.

Huile Comogene.—Mix equal parts of oil and spirits of rosemary with a few drops of oil of nutmeg. To be used daily.

Huile De Phenix.—Clarified beef marrow, 4 oz.; lard, 2 oz.; oil of mace, 4 oz.: melt these together, and strain the mixture through linen into a warm mortar; stir, and when it begins to cool add the following solution, and stir constantly till it is quite cold:—Oil of cloves, lavender, mint, rosemary, sage, and thyme, of each, ½ dr.; balsam of ton, 4 dr.; camphor, 1 dr.; rectified spirit 1 oz. Put the spirit and balsam in a phial, and place it in warm water till the solution is complete; then add the camphor and essential oils.

Huile Philocombe D'Aubril.—Triturate together, without heat, equal parts of cold-drawn nut oil, almond oil, and prepared beef marrow, adding any essential oil as a perfume.

Dr. Boylston's Compound.—To 8 oz. of soft water add 1 oz. of sweet oil and 1 dr. of concentrated aqua ammonia, which immediately combines the water with the oil, making a milky solution. This compound is sold as the “sap of the grape-vine.”

The celebrated Milk of Roses (one sort) is made by the same formula.

Dyes and Powders.

I have already commented at length on the objectionable practice of dyeing the hair,—pointing out both its injurious results and its unphilosophic character from an artistic point of view. In brief, as the substances necessarily employed for this purpose are commonly very powerful, and often poisonous, the texture of the hair is injured by them, baldness is frequently produced, and there is danger that poisonous particles will be absorbed, occasioning paralysis of certain nerves, particularly the optic nerve. This is not speculation, but fact ; for the cases of this character are by no means rare. Those preparations, in particular, which contain sulphur and acetate (or sugar) of lead, are always dangerous.* Some of the dyes in common use are so irritating in their nature that they produce inflammation of the scalp, and even painful eruptions, which are incurable so long as the dye is employed. But leaving these considerations out of the question (none, however, can afford to do so in practice), the use of even the simplest dye involves much time, care, and patience,—with the cheerless reflection that this expense of time and trouble must be incurred again and again, at brief intervals, for an indefinite period. And it is well worth the asking, whether anyone is ever deceived by the contemptible disguise, or is in any way more favorably disposed toward the person who has attempted it: whether one's appearance is really improved by the use of these preparations. In the vast majority of cases a true taste decides promptly in the negative. The harmony which nature is always so careful to preserve in the outer man is essentially marred by so vital an alteration, and few are so dull as not to feel the effect of the discord, and to be unpleasantly affected by it. A false taste decides for *black hair*, in all cases, though nature may

* The active properties of sugar of lead are exceedingly subtle. They readily penetrate the external skin, and exert their deleterious influence on the sensitive skin beneath. The nerves, and even the arteries and the substance of the membranes, are sometimes injured by this metallic salt. Its presence within the skin is often manifested by a debilitation of the optic nerve, which greatly impairs the sight. The acuteness of the sense of hearing also at times becomes greatly impaired, and I have known a complete prostration of the nervous system to follow the application of this popular but dangerous poison. Therefore, I advise all who are using a compound containing this poisonous ingredient, immediately to abstain therefrom, unless it has been prepared or prescribed by a regular practising physician. It would be better to wear the hair through life as white as the driven snow, than to be deprived for one month of the pleasure conferred by the organs of sight or hearing.

have declared for yellow, brown, or red; and the new effect is often not only inartistic but supremely absurd. And where age has made one's locks partially or wholly gray, or white, it is preposterous to think of restoring the appearance of youth by dyeing them. The respect which a view of the gray locks might inspire, gives way to contempt at thoughts of so silly a display of vanity, and so glaring a proof of bad taste.

Granting the truth and justness of these observations, it may be a matter of surprise, with some readers, that so many can be found who make use of dyes for the hair. But it should be remembered that few are aware of the danger which attends the practice, and moreover, the number of really refined and sensible persons, in any community, is comparatively very small. Those persons are in a vast majority who are ready, for "appearance" sake, to incur any amount of risk or trouble, and who think more of public opinion than of comfort, happiness, or self-respect. It is in the hope of diminishing this latter number, and of increasing the former, that I take the trouble to write thus, and to expose the composition of the dangerous and filthy preparations which are so generally lauded, and used on the human hair. That I have not misapplied these terms will become abundantly evident on an examination of the recipes to follow. What, for instance, could well be more odious than the delectable compound known as "La Forest's Cosmetic Wash for the Hair?"* Think of drenching the scalp of a lady with *ink!*—yet this foul stuff is scarcely different.

The substances which from the earliest ages have been most commonly employed in dyeing the hair, are such as the following:—The oil of cade, gall nuts, the lye of vine branches, preparations of lead, ravens' eggs, putrified swallows, colocynth, etc. Of late years, since chemical science has been trained into service in the ordinary affairs of life, it has been discovered that the nitrate of silver constitutes a very efficient basis, and it is now extensively used for deepening the color of the hair, as may be seen in what follows. It is a costly material (compared, at least, with sulphate of iron and gall nuts), and hence has not come into so general employment as might otherwise have been expected.

The preparations in which this material is the active ingredient

* "Red wine, 1 lb.; salt, 1 dr.; sulphate of iron, 2 dr. Boil for a few minutes, add common verdigris, 1 dr.; leave it on the fire two minutes, withdraw it, and add 2 dr. of powdered nut-gall. Rub the hair with the liquid; in a few minutes dry it with a warm cloth, and afterwards wash with water."

vary more in form than in properties. Thus, we have a pomade, applied with brush and comb, composed of nitrate of silver, cream of tartar, ammoniac, and prepared lard. A paste is also used made of nitrate of silver, proto-nitrate of mercury, and distilled water, thickened with starch ;—it is applied in the evening, the head being kept covered with a cap of gummed taffeta during the night, and in the morning the paste is washed off, and the hair anointed. But the compounds most generally employed are in a liquid form, and are usually termed “instantaneous” liquid hair-dyes ; some of them, however, not quite so prompt in action, are styled “atmospheric” dyes. The former usually consist of two liquids, the first an acidulated mordant or base (sometimes called a setting), and the other containing the silver which is invariably the basis of the “instantaneous” dyes. Of this sort are the dyes known as Batchelor’s, Christadoro’s, Phalon’s, Bogle’s, Rothe’s, Harrison’s, and Perry’s. The formulæ for most of these are given in the following list ; but out of kindness to the proprietors I refrain from distinguishing each with the name of its maker. It will be observed that there is a strong family resemblance in the group :—

“Instantaneous” Liquid Hair Dyes.

No. 1. *First liquid.*—To 1 oz. of gallic acid, dissolved in 8 oz. of alcohol, add $\frac{1}{2}$ gallon of soft water.

Second, do.—To 1 oz. of nitrate of silver dissolved in 1 oz. of concentrated aqua ammonia, and 3 oz. of soft water, add 1 oz. of gum arabic, and 4 oz. of soft water.

No. 2. *First liquid.*—To $\frac{1}{4}$ oz. of gallic acid dissolved in 8 oz. of alcohol, add $\frac{1}{2}$ gallon of soft water.

Second do.—To 1 oz. of crystallized nitrate of silver dissolved in 1 oz. of concentrated aqua ammonia and 2 oz. of soft water, add 2 oz. of gum arabic and 5 oz. of soft water.

No. 3. (*One preparation*).—To 1 oz. of crystallized nitrate of silver dissolved in 2 oz. of aqua ammonia, add 16 oz. soft water.

This is not an instantaneous dye, but after exposure to the light and air, a dark color is produced upon the surface to which it is applied.

No. 3. (*Instantaneous*). *First liquid.*—To 1 $\frac{1}{2}$ oz. of gallic acid and $\frac{1}{2}$ oz. of tannin dissolved in 8 oz. of alcohol, add $\frac{1}{2}$ gallon of soft water.

Second do.—To 1 oz. of crystallized nitrate of silver dissolved in 1 oz. of concentrated aqua ammonia, add 1 $\frac{1}{2}$ oz. of gum arabic and 5 oz. of soft water.

No. 4. *First liquid.*—To $\frac{1}{2}$ oz. of gallic acid, 1 oz. of tannin dissolved in 10 oz. of alcohol, add 2 quarts of soft water.

Second do.—To 1 oz. of crystallized nitrate of silver dissolved in 2 oz. of concentrated aqua ammonia, add 12 oz. of soft water and 1 $\frac{1}{2}$ oz. of gum arabic.

Third do.—1 oz. of hydro sulphate of potassa dissolved in $\frac{1}{2}$ gallon of soft water. This third liquid is intended to produce a deep black color, should the others fail.

No. 5. *First liquid*.—To 2 oz. gallic acid dissolved in 12 oz. of alcohol, add three quarts of soft water.

Second do.—To 1 oz. of crystallized nitrate of silver dissolved in 2 oz. of concentrated aqua ammonia, add 1 oz. of gum arabic and 8 oz. of soft water.

No. 6. *First liquid*.—To 1 oz. of gallic acid dissolved in 8 oz. of alcohol, add $\frac{1}{4}$ gallon of soft water.

Second do.—To 1 oz. of crystallized nitrate of silver dissolved in 2 oz. of concentrated aqua ammonia, add 9 oz. of soft water.

"Atmospheric" Liquid Hair Dyes.

No. 1.—Nitrate of silver, 11 dr.; nitric acid, 1 dr.; distilled water, 1 pint; sap green, 3 dr.; gum Arabic, 1 dr.: mix.

No. 2.—Nitric acid, 1 dr.; nitrate of silver, 10 dr.; sap green, 9 dr.; mucilage, 5 dr.; distilled water, $3\frac{1}{2}$ fluid oz.

No. 3. Silver, 2 dr.; iron filings, 4 dr.; nitric acid, 1 oz.; distilled water 8 oz. Digest, and decant the clear solution. To be carefully applied with a close brush.

No. 4. Hydrosulphuret of ammonia, 1 oz.; liquor of potash, 3 dr.; distilled water, 1 oz.; mix. Apply this with a tooth-brush for 15 or 20 minutes: then brush the hair over with the following:—Nitrate of silver, 1 dr.; distilled water, 2 oz.: using a clean comb to separate the hair. [Pyro-gallic acid also stains the hair an indelible brown.]

As the dyes containing nitrate of silver stain the skin as well as the hair, great care is to be exercised in applying them.

Lead, Sulphur, and Lime Powders and Liquids.

The following six are all well-known liquid dyes, the names of which are withheld for the reason elsewhere assigned in the case of other preparations:—

No. 1.—1 dr. lac sulphur, $\frac{1}{2}$ dr. sugar lead, 4 oz. rose water. Mix carefully. Apply to the hair repeatedly, till it assumes the desired shade.

No. 2.—To 16 oz. of rose-water diluted with an equal part of soft water, add $\frac{1}{4}$ of an ounce of sulphur and $\frac{1}{2}$ oz. of sugar of lead; let the compound stand five days before usng.

No. 3.—To 8 oz. of 80 per cent. alcohol, add 2 oz. of castor oil, 1 dr. of sulphur, 1 dr. sugar of lead.

No. 4.—To 8 oz. vinegar diluted with an equal part of soft water, add 2 dr. sulphur, 2 dr. sugar of lead.

No. 5.—To 16 oz. of soft water, add 8 oz. of alcohol and $\frac{1}{2}$ oz. spirits of turpentine; put $\frac{1}{4}$ of an oz. of sulphur and $\frac{1}{2}$ oz. sugar of lead.

No. 6.—To 1 pint of diluted rose-water, put $\frac{1}{2}$ of an oz. of sulphur, $\frac{1}{2}$ oz. of sugar of lead.

The Unique Hair Powder.—To 6 oz. lime, reduced to a powder by wetting it with water, add 2 oz. lltbarge; when it becomes dry, sift it through a fine cloth.

This is said to be the most effectual hair-dye that has yet been discovered. But the

application of it is not very agreeable, though simple enough:—Put a quantity of it in a saucer, pour boiling water upon it, and mix it up with a knife like thick mustard; divide the hair into thin layers, with a comb, and plaster the mixture thickly into the layers to the roots, and over the hair. When it is all completely covered, lay over it a covering of damp blue or brown paper; then bind over it, closely, a handkerchief, put a nightcap over all, and go to bed; in the morning, brush out the powder, wash thoroughly with soap and warm water, then dry, curl, oil, etc.

Hair thus managed, it is said, will be a permanent and beautiful black;—and I feel like congratulating the person whose fortitude has sufficed for the operation.

Orfila's Hair-Powder.—1. Take three parts of litharge and 2 of quick-lime, both in fine powder, and mix them carefully. When used, a portion of the powder is mixed with hot water or milk, and applied to the hair, the part being afterwards enveloped in oil-skin, or a cabbage-leaf, for 4 or 5 hours.

2. Litharge, 2 parts; slackened lime, 1 part; chalk, 2 parts; all finely powdered, and thoroughly mixed. When required for use, mix the powder with warm water, dip a brush in the mixture, and rub the hair well with it. After two hours, let the hair be washed.

3. Litharge, $4\frac{1}{2}$ oz.; quicklime, $\frac{3}{4}$ oz.: reduce these to a fine powder, which pass through a sieve. Keep it in a dry, close bottle. Wash the hair first with soap and water, then with tepid water; wipe it dry, and comb with a clean comb. Mix the dye in a saucer, with hot water, to the consistency of cream, and apply it to the hair, beginning at the roots. Place over it four folds of brown paper, saturated with hot water, and drained till cool; and over this a silk cap and a nightcap. Let it remain from four to eight hours, according to the shade required. When removed, oil the hair, but do not wet it for three or four days.

Chevallier's.—Mix 5 dr. of fresh slackened lime with $1\frac{1}{2}$ oz. of water, and strain through silk; put the milk of lime into a 4 oz. bottle. Dissolve 5 dr. of acetate of lead in sufficient water, and add enough slackened lime to saturate the acetic acid (a drachm, or rather more); let it settle, pour off the liquor, wash the precipitate with water, and add it to the milk of lime.

Dr. Hahnman's.—Levigated litharge, 11 oz.; powdered quicklime, 75 oz.; hair powder, 37 oz.: mix. When used, a portion of the powder is mixed with warm water in a saucer, and applied to the hair with the fingers, taking care to cover the hair to the roots. Cover the whole with a sheet of cotton wadding moistened with water, and this with a folded cloth. Let it remain on for 3 hours; or better, for the night.

Warren's.—Sifted lime, 16 oz.; white lead, 2 oz.; litharge, in fine powder, 1 oz.: mix well together, and keep dry. To dye *black*, mix a little powder with water to the consistency of cream. To dye *brown*, use milk instead of water. Apply with a small sponge to every hair.

Pommade de Jeunesse.—Pomatum mixed with bismuth is said to turn the hair black.

Depilatories.

In the passages (of Chapter XI.) devoted to the treatment of the hair, I have explained the futility and the danger of the use of preparations for removing superfluous hairs. In brief, as ordinarily applied, they do not destroy the hair beneath the surface of the skin;

and if the use of the powerful irritant be continued, with the view of accomplishing that end, the skin is almost certain to be seriously injured, and perhaps permanently disfigured,—and even then, the main purpose of the application may remain unaccomplished. There is not one of these depilatories that does not require caution in the using. Some of them contain sulphuret of arsenic (orpiment), which, being absorbed, may act as a virulent poison.

Once for all, I may state that the razor or the tweezers is to be preferred before any chemical depilatory in existence. If, however, any of my readers are resolved to disregard my advice, in this matter, I must still be their friend, to the extent of showing them the composition of the principal compounds in use, and indicating my preference.

Perhaps the safest and best of these methods of procedure, for the removal of superfluous hairs, is the following :—

The hairs should be perseveringly plucked up by the roots, and the skin, washed twice in a day with warm soft water, without soap, should be treated, after ablution, with the following lotion, commonly termed Milk of Roses:—beat 4 oz. of sweet almonds in a mortar, and add $\frac{1}{2}$ an oz. of white sugar during the process; reduce the whole to a paste by pounding; then add, in small quantities at a time, 8 oz. of rose water. The emulsion thus formed should be strained through a fine cloth, and the residue again pounded, while the strained fluid should be bottled in a large stopped vial. To the pasty mass in the mortar add $\frac{1}{2}$ an oz. of sugar, and 8 oz. of rose water, and strain again. This process must be repeated three times. To 32 oz. of fluid add 20 dr. of the bichloride of mercury, dissolved in two ounces of alcohol, and shake the mixture for five minutes. The fluid should be applied with a towel, immediately after washing, and the skin gently rubbed with a dry cloth till *perfectly* dry.

I add a number of other recipes, of greater or less merit :—

No. 1.—Mix lime and water to a thick cream, and pass through the mixture 25 or 30 times its volume of sulphuretted hydrogen gas. When the gas escapes, stop the process. The pulpy mass is spread on paper, and applied for 12 or 15 minutes, and then washed off with a sponge and water. The only objection to this is its disgusting smell.

No. 2.—Quicklime, 4 oz.; orris powder, 1 $\frac{1}{2}$ oz.: mix. Applied as No. 1.

No. 3 (RAYER'S).—Quicklime, 1 oz.; carbonate of potash, 2 oz.; charcoal powder, 1 dr. Mix, and keep in a well-stopped bottle. The last two formulae are intended to obviate the danger attending the use of arsenical compounds.

No. 4.—Quicklime, 12 oz.; orpiment, 1 dr.; plain or scented hair-powder, 10 oz.: form the mixture into a paste, at the time of using, with a little water; apply it to the parts, and wash it off when dry.

No. 5.—Quicklime, 12 parts; hair powder, 10 parts; powdered palm soap, 4 parts; orpiment, 1 part. To be used as the last.

No. 6 (TURKISH RUSMA).—Quicklime, 8 parts; orpiment, 1 part: mixed into a paste, at the time of using, with white of egg and soap lees. This is more active than the preceding compound.

No. 7 (COOLEY'S).—Quicklime, 1 oz.; nitre, $\frac{1}{4}$ oz.; orpiment, 3 dr.; sulphur, 1 dr.; soap lees, 4 oz. Mix these, and evaporate the mass to a proper consistence.

No. 8 (CHINESE).—Quicklime, 16 oz.; pearlash, 2 oz.; liver of sulphur, 2 oz. Reduce these to a fine powder, and keep it in a close bottle. To be used as No. 4.

Mr. Redwood recommends a strong solution of sulphuret of barium, with sufficient powdered starch to form a paste; to be left on for a few minutes, and then scraped off with the back of a knife.

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